AP-111

SWMU No. 10 Sludge Pits

Investigation Work Plan

October 2018

Chavez, Carl J, EMNRD

From: Martinez, Cynthia, NMENV
Sent: Tuesday, June 11, 2019 1:41 PM
To: John.Moore@andeavor.com
Cc: Kieling, John, NMENV; Cobrain, Dave, NMENV; VanHorn, Kristen, NMENV; Suzuki, Michiya, NMENV; Chavez, Carl J, EMNRD; 'king.laurie@epa.gov'; Brian.Moore@andeavor.com
Subject: Letter to Mr. Moore
Attachments: WRG 2019- Disapproval [Revised] Investigation Rpt SWMU NO. 10 Sludge Pits HWB-WRG-16-001.pdf

Good Afternoon,
Please see attachment.

Cynthia Martinez
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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 10, 2019

John Moore
Environmental Superintendent
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

RE: DISAPPROVAL
[REVISED] INVESTIGATION REPORT SOLID WASTE MANAGEMENT UNIT (SWMU) NO. 10 SLUDGE PITS
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-16-001

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *[Revised] Investigation Report Solid Waste Management Unit (SWMU) No. 10 Sludge Pits* (Report), dated October 2018, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Disapproval. The Permittee must address the following comments.

Comment 1

The cover letter dated November 8, 2018 is incorrectly titled as the "*Revised Investigation Report for SWMU 12 (Sludge Pits).*" The investigation is pertinent to SWMU 10 rather than SWMU 12. In addition, the cover letter states, "[e]nclosed please find two (2) copies of the report entitled *Investigation Work Plan*..." The submittal is a report rather than a work plan. Correct the typographical errors and submit a revised cover letter.

Comment 2
A red-line strikeout (RLSO) version of the revised Report was not included with the submittal. The Permittee must provide an accurate and complete RLSO versions that shows where all changes were made to the documents. Failure to provide RLSO version slows review by creating the potential for changes to be overlooked.

Comment 3
The Permittee's response to NMED's Comment 1 states, "NMED suggests that contamination in soil from other sources was identified; however, there is no evidence of "other sources" based on the historical research of the area of SWMU 10, field observations during the investigation, or the chemical analyses from samples of soil." There are several potential sources upgradient of SWMU 10 for the contaminants detected in soil samples collected during the investigation. The Permittee used the Aeration Basin soil laboratory analytical results to calculate the site- specific dilution attenuation factor (DAF) for SWMU 10. The Permittee's use of a site-specific DAF resulted in "chasing the contamination" beyond the SWMU boundary, which was unnecessary for the scope of this investigation. As a result, the intent of the investigation became unclear, because the Permittee investigated soils in general rather than soils located specifically within the Sludge Pits. Provide a figure based on the historic documents included in Appendix H (SWMU 10 Historical Aerial Photo) that depicts the soil boring locations overlain on the pit locations.

Comment 4
The Permittee's response to NMED's Comment 3 states, "[p]ursuant to Comment 1 above ("use of a site-specific dilution attenuation factor (DAF) resulted in investigation beyond the boundary of the SWMU and collected data related to contamination from other sources . . .") no further investigation is proposed. It appears that NMED believes the existing borings have delineated the lateral extent of SMWU 10 and any potential releases from the SWMU, to the extent of possibly detecting releases from other unassociated releases (e.g., the Old API Separator, release from the wastewater pipeline, etc.)." The Permittee misinterpreted the intent of NMED's Disapproval Comment 1. The Permittee must demonstrate that the soil borings drilled during the investigation were within the historic boundary of the SWMU.

Comment 5
The Permittee's response to NMED's Comment 4 Item 3 states, "[t]he land surface elevations used to calculate the elevation on top of bedrock were estimated using the site topographic map, which was prepared based on a site-wide survey conducted by Precision Engineering in 2008." According to the boring logs included in Appendix C (Boring Logs), the layer of claystone (bedrock) is clearly distinguished from the layer above it (e.g., clay) in most boring logs. However, previous borings installed in the vicinity (e.g., 1990 – 1994 soil borings) did not depict such clear distinction; the lithology was entirely described as clay in most boring logs. Claystone and clay are presumably similar at the site and the interpretation of the distinction may be subjective. Although the land surface elevation is likely proportional to the elevation on top of the bedrock, the data presented in Figure 11 (Estimated Elevation on Top of Bedrock) are subjective. Additionally, subsurface conditions in the vicinity of SWMU 10 are altered by previous pit construction and soil excavation activities. Remove Figure 11 from the revised

Report. In addition, during future drilling of borings, take photographs of soil cores that depict the distinction between the layers and include them in the submittal.

Comment 6
The Permittee's response to NMED's Comment 4 Item 7 states, "Figure 30 (now Figure 26) has been revised to use the higher value of 120 ug/L [in groundwater sample collected from well SWMU 25]." The value remains as 110 ug/L in the figure. Correct the discrepancy in the revised Report.

Comment 7
The Permittee's response to NMED's Comment 4 Item 8 states, "[t]he concentration of 2 methylnaphthalene [in groundwater sample collected from well SWMU 10-25] has been revised to the higher value of 180 ug/l on Figure 31 (now Figure 27)." The value remains as 140 ug/L in the figure. Correct the discrepancy in the revised Report.

Comment 8
The Permittee's response to NMED's Comment 6 states, "[t]he wastewater treatment system is designed to be capable of removing metals." Discuss how metals are removed by the wastewater treatment system in the revised Report.

Comment 9
The Permittee's response to NMED's Comment 7 states, "[t]his same comment [regarding the disposal of investigation derived waste in the bundle cleaning pad] has been included in other recent NMED correspondence and has already been addressed. Provide citations for the references that address the issue in a response letter.

Comment 10
The Permittee's response to NMED's Comment 8 states, "[h]owever, it is not possible to choose a dilution factor based on a desired outcome, but rather the dilution factor is driven by the sample-specific concentrations of other constituents that mandate dilution of the sample in order for the sample to be analyzed." The diesel and motor oil range organics (DRO and MRO) concentrations in the soil sample collected from boring SWMU 10-17 at depths between six and eight feet bgs was recorded as 7,800 and <4,776 mg/kg, respectively according to Table 7. Presumably, the dilution required by DRO analysis prevents quantification of MRO. The analytical method may be modified to analyze MRO separately from DRO. In addition, more than one analytical method is often available to analyze the same constituents. This appears to be a recurring issue. The Permittee must discuss a measure to analyze gasoline range organics (GRO), DRO and MRO independently without being affected by other constituents' dilution factors. Include the discussion in the response letter.

Comment 11
The Permittee's response to NMED's Comment 11 states, "[t]he only pipeline near temporary well SWMU 10-3 is an above-ground pipeline and there have not been any documented leaks in this area, which would have been easily observed and reported." The statement does not explain the elevated chloride concentration in the groundwater sample collected from well SWMU 10-3.

Explain the basis for the elevated chloride concentration in the vicinity of SWMU 10-3 in the revised Report.

Comment 12
The Permittee's response to NMED's Comment 16 states, "[w]ith removal of the DAF soil screening levels the above discussion is no longer relevant and has been removed." It is appropriate to remove the discussion pertinent to DAF; however, the response does not address Comment 16. The screening level referenced in Comment 16 is the residential soil screening level rather than the DAF soil screening level. Address the comment in the revised Report.

Comment 13
Section 5 (Regulatory Criteria) states, "[t]here are no soil screening levels for gasoline range organics and the individual compounds listed for groundwater (gasoline range criteria) are included in the list of analytes used for site samples." Since a revised Report is required and a further investigation is necessary at SWMU 10, evaluate all detections relative to the screening levels listed in the *Risk Assessment Guidance for Site Investigations and Remediation Volume I Soil Screening Guidance for Human Health Risk Assessments* (Guidance), dated February 2019. The Guidance lists the screening levels for TPH-GRO as 100 mg/kg (residential), 500 mg/kg (industrial/construction worker) and 10.1 ug/L (groundwater). Include the screening levels in the revised Report.

Comment 14
The source of screening levels for TPH-DRO and MRO is indicated as "(9)" in Table 7 (SWMU 10 Soil Analytical Results Summary). However, the note for "(9)" is missing and not explained in Table 7. Correct the table in the revised Report.

The Permittee must address all comments in this Disapproval and submit a revised Report. Two bound hard copies and two electronic versions must be submitted to NMED. In addition, include a red-line strikeout version in electronic format showing where all revisions to the Report have been made. The revised Report must be accompanied with a response letter that details where revisions have been made, cross-referencing NMED's numbered comments. The revised Report must be submitted to NMED no later than **August 30, 2019**.

If you have questions regarding this Disapproval, please contact Michiya Suzuki of my staff at 505-476-6059.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: K. Van Horn, NMED HWB
D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez, OCD
L. King, EPA Region 6 (6LCRRC)
B. Moore, WRG

File: Reading File and WRG 2019 File
HWB-WRG-16-001

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Mr. John E. Kieling, Chief

New Mexico Environmental Department
2905 Rodeo Park Drive East, Bldg. 1

Santa Fe, NM 87SOS-6303

RE: RESPONSE TO DISAPPROVAL

INVESTIGATION REPORT SOLID WASTE MANAGEMENT UNIT (SWMU)

NO. 10 SLUDGE PITS

WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY

EPA ID # NMD000333211

HWB-WRG-16-001

Dear Mr. Kieling:

Gallup Refinery is in receipt of your letter of June 14, 2018, which provided comments on the referenced report, dated December 2016. The following responses address each of your comments.

NMED Comment 1

The Permittee's investigation of the Sludge Pits (SWMU 10) discovered widespread soil and groundwater contamination. The Permittee's use of a site-specific dilution attenuation factor

(DAF) resulted in investigation beyond the boundary of the SWMU and collected data related to contamination from other sources. The Permittee's intent for the investigation is not clear and the original intent, to determine whether the Sludge Pits affected soils and groundwater, was not resolved. The Permittee must first determine the original location of the Sludge Pits and an investigation must be conducted to evaluate contaminant migration from the pits. Previous aerial photographs indicate that the Sludge Pits may be located north of the SWMU 10 location shown in Figure 2. Revise the boundary of SWMU 10 in Figure 2, *SWMU No. 10 Location Map* as necessary based on the aerial photographs.

Gallup Refinery Response: NMED suggest that contamination in soil from other sources was identified; however, there is no evidence of "other sources" based on the historical research of

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the area of SWMU 10, field observations during the investigation, or the chemical analyses from samples of soil. This issue was discussed with NMED in meetings held on May 2, 2018 and again on September 19, 2018. The following discussion provides a summary of the information discussed in the two aforementioned meetings.

The location of SWMU No. 10 cannot be currently discerned based on field observations of the land surface, as the SWMU was previously remediated to a limited extent as explained in Section 2.1 of the SWMU No. Investigation Work Plan. Historical aerial photos and historic site drawing were used to locate the former location of SWMU No. 10. Please see the enclosed historic photo of the area with reference lines that correspond with site physical features (i.e., aboveground pipeline corridor and eastern edge of Evaporation Pond No. 2.) that were present when SWMU No. 10 was in operation and remain at the site today. As shown in the photo, SWMU No. 10 can clearly be identified to the north and east of the intersecting reference lines. Also noted is crude tank T-101, which is the closest large tank to the southeast of the SWMU No. 10. For reference, crude tank T-101 has a diameter of 110 feet. The description of the SWMU No. 10 presented in Section 2.1 of the Investigation Work Plan describes "two pits that covered an area of approximately 130 feet by 80 feet and 70 feet by 50 feet." As shown in the photo, one pit is visible that would approximate the 130 feet by 80 feet pit. This suggests the second pit is not visible in the historic photo, which is consistent with some of the historic descriptions that indicate the area was expanded from the initial "pit area." Although not clearly described in the available historical documentation, it is possible the operations changed from smaller deeper pits to larger shallower "drying beds" during the life of the SWMU, as was common practice at refineries operating during similar time periods. The second pit appears to be located to the west of the larger pit observed in the aerial photo, as significant concentrations of TPH were identified at depths of 4 – 6 feet below ground surface in soil borings 10 and 11, and there are no "other sources" in this area.

Recognizing the potential for the SWMU to cover a larger area than represented in the available historic photo, the Investigation Work Plan, which was approved by NMED with modifications on March 2, 2015, included provisions to allow for additional soil borings based on field observations. The relevant section of 4.1 is shown below.

> *The proposed locations for soil borings/temporary wells are shown on Figure 7. As necessary, additional investigation of soils and groundwater will be conducted to define the lateral extent of any identified releases. If there are indications of lateral migration of constituents away from the former location of the sludge pits within subsurface soils and/or groundwater, then additional borings/ temporary monitoring wells will be completed within approximately 50 feet of the original boring location. Additional borings/temporary wells will*

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continue to be added in a similar manner, as necessary, to define the lateral and vertical extent of impacts to soil and/or groundwater. Selection of additional sample locations will be coordinated with NMED.

Comment No. 1 of NMED's March 2, 2015 Approval with Modifications letter states the following, "Figure 7 (Proposed Sampling Locations) depicts the proposed locations for borings, but none of the locations are labeled. In the Investigation Report provide a figure where the borings are identified. Additionally, re-locating several of the proposed locations may provide better coverage to compare to prior sampling analytical results exceeded the soil screening levels; however, it is difficult to determine historic sampling locations in comparison to the proposed locations using the figures provided in the Work Plan. Submittal of revised figures are not required, because the Permittee's sampling plan, as discussed in Section 4.1 (Investigation), allows for additional investigation to be conducted, if field results reveal that the lateral and vertical extent of contamination has not been documented."

Pursuant to the Investigation Work Plan and NMED's Approval with Modifications, Western completed additional soil borings/temporary wells based on field observations to define the boundaries of the SWMU and any potential migration of contaminants from the SWMU. Regarding the intent of the investigation, the purpose of the investigation is clearly set forth in the Investigation Work Plan, which was reviewed and approved by NMED. We believe NMED's comment is related to the field implementation and are hopeful the discussion above addresses NMED's questions regarding the "intent" of the investigation. Figure 2, which shows the approximate location of SWMU No. 10, has been revised to more accurately reflect the field observations.

Additional discussion has been provided in Section 3.1.1 of the Report and the referenced aerial photo is provided in Appendix H.

NMED Comment 2

The Permittee's use of a site-specific DAF for comparison was inappropriate for several reasons.

The DAF was calculated based on data obtained from the Aeration Basin, which is not related to the Sludge Pits other than by proximity. Additionally, since groundwater contamination beneath the Sludge Pits originates from various upgradient sources, and contamination is already present in the aquifer, the use of a site-specific DAF is not applicable. DAF is used to determine if contaminants in soil can migrate to groundwater, and in this case, groundwater is contaminated in the area. All discussions pertaining to a site-specific DAF must be removed from the revised Report. Use residential screening levels for comparison at this time. All tables and figures must be revised accordingly, and the soil/groundwater concentration maps must address all compounds exceeding

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residential screening levels. It should be noted that the use of residential screening levels results in fewer contaminants driving risk compared to the use of screening levels derived from a site-specific DAF.

Gallup Refinery Response: The reference to the DAF has removed from the Report (Executive Summary, Sections 5, 6.1 and 7.1) with the exception of a short explanation in Section 5 to note NMED's direction that the DAF is not applicable. The Table 7 has been revised to reflect comparisons to residential soil screening levels. There are now only two Figures for soils (13 and 14) with the exception of the figures for total petroleum hydrocarbons, which were unaffected. The soil tables retain the non-residential screening levels, but all highlighting has been revised to compare to residential screening levels. The report discussion is also focused on comparison to residential soil screening levels.

NMED Comment 3

The Permittee must delineate soil contamination within the boundary of SWMU 10. The proposed borings in Figure 35, *Proposed Soil Boring Map,* must aid in defining the boundaries of the Sludge Pits. Revise the boring locations in the revised Report, as necessary. The Permittee must propose to remediate the soil contamination (e.g., through soil excavation) based on the extent of soil contamination in a future work plan. The risk associated with migration of contaminants through soil to groundwater would be negligible after soil contamination is removed from and beneath the Sludge Pits.

Gallup Refinery Response: Pursuant to Comment 1 above ("use of a site-specific dilution attenuation factor (DAF) resulted in investigation beyond the boundary of the SWMU and collected data related to contamination from other sources . . .") no further investigation is proposed. It appears that NMED believes the existing borings have delineated the lateral extent of SMWU 10 and any potential releases from the SWMU, to the extent of possibly detecting releases from other unassociated releases (e.g., the Old API Separator, release from the wastewater pipeline, etc.).

NMED Comment 4

There are multiple editorial issues in the Report. The following issues must be addressed in the revised Report:

1. The depth to groundwater in temporary well SWMU 10-14 is recorded as 12.50 feet below ground surface (bgs) according to Table 4, *Groundwater Field Measurements,*

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while total depth of the well appears to be 12 feet bgs according to Appendix C, *Boring Logs.* Correct the discrepancy in the revised Report.

Gallup Refinery Response: The depth of the boring for SWMU 10-14, as shown on the boring log included in Appendix C is 23 feet. No correction is required.

2. In Section 4.3.1, *Soil Investigation,* the Permittee states, "[a] claystone was encountered from 16.5 feet bgl - 19 feet bgl. The claystone was observed to be very stiff, dry, brown and gray. The claystone did not have an odor. The PID readings were 5 ppm [in boring SWMU 10-25]." Table 3, *Soil Boring Samples - Vapor Screening Results,* does not show the vapor screening results below fourteen feet bgs in boring SWMU 10-25.

   Revise Table 3 to include the PID data in the revised Report.

Gallup Refinery Response: The missing PID readings for the lower depth intervals have added to Table 3.

3. In Section 4.2.1, *Geology,* the Permittee states, "[a] second map (Figure 11) was prepared to show the current elevation on top of bedrock (Chinle Group)." The ground elevation was not recorded in the boring logs in Appendix C. Provide the survey data for all borings or explain how the elevation on top of the bedrock was determined in the revised Report.

Gallup Refinery Response: The land surface elevations used to calculate the elevation on top of bedrock were estimated using the site topographic map, which was prepared based on a site-wide survey conducted by Precision Engineering in 2008. This is explained further in Section 4.2.1 of the Report.

4. The chromium concentration in the soil sample collected from SWMU 10-20 (2-2.5') exceeds residential and non-residential screening levels; however, the concentration is not highlighted to show the exceedance in Table 7. Highlight the exceedance in the revised Report.

Gallup Refinery Response: The subject value of 150 mg/kg was bolded in the table to note that the concentration exceeds the residential soil screening level. Highlighting was used in the table to identify concentrations that exceed the DAF number and this concentration did not exceed the DAF

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number, and thus was not highlighted. No revision is made to Table 7 per this comment. Table 7 is revised to remove the DAF values.

5. Table 8, *Groundwater Analytical Results Summary,* lists chloride, fluoride and sulfate in the category of total metals. They must be listed under a separate category for anions. Revise Table 8 accordingly.

Gallup Refinery Response: A separate category has been added for anions in Table 8.

6. Table 8 lists cyanide in the category of total metals. It must be listed under a separate category. Revise Table 8 accordingly.

Gallup Refinery Response: Cyanide is now reported in Table 8 under a separate category.

7. In Section 6.2, *Groundwater Analytical Results,* the Permittee states, "[1]methylnaphthalene was detected above the screening level of 11 ug/l in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at a concentration of 70 ug/l, 170 ug/l, and 120 ug/l, respectively." The 1-methylnaphthalane concentration in the groundwater sample collected from SWMU 10-25 is recorded as 110 ug/L in Figure 30, *1-Methylnaphthalene Groundwater Concentration Map.* Revise the figure to correct the discrepancy.

Gallup Refinery Response: Figure 30 (now Figure 26) has been revised to use the higher value of 120 ug/L.

8. In Section 6.2, the Permittee states, "[2]-methylnaphthalene was detected above the screening level of 36 ug/l in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at a concentration of 98 ug/l, 240 ug/l, and 180 ug/l, respectively." The 2-methylnaphthalane concentration in the groundwater sample collected from SWMU 10-25 is recorded as 140 ug/L in Figure 31, *2-Methylnaphthalene Groundwater Concentration Map.* Revise the figure to correct the discrepancy.

Gallup Refinery Response: The concentration of 2-methylnaphthalene has been revised to the higher value of 180 ug/l on Figure 31 (now Figure 27).

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9. In the Executive Summary and Section 7.1, *Conclusions,* the Permittee states, "[t]hirteen organic constituents (1methylnaphthalene,2-methylnaphthalene, 1,2,4-trimethlybenzene, 1,3,5- trimethylbenzene, benzene, bromodichloromethane, MTBE, naphthalene, toluene, xylenes, 2,4-dimethylphenol, 3+4-methylphenol, and phenol) were detected in groundwater samples collected from soil borings at concentrations above screening levels." The 2-methylphenol concentrations in groundwater samples collected from temporary wells SWMU 10-20 and 10-25 also exceed the screening level according to Table 8, *Groundwater Analytical Results.* Revise the Report accordingly.

Gallup Refinery Response: The referenced discussions in the Executive Summary and Section 7.1 have been revised to note that 14 organic constituents, including 2-methylphenol, were detected above the groundwater screening levels.

10. In Section 7.1, the Permittee states, "[m]any of the reported concentrations are only slightly above the screening levels (i.e., generally less than one order of magnitude above the screening levels)." The benzene, 2,4-dimethylphenol, 3+4-methylphenol, 2-methylphenol and naphthalene concentrations exceed the screen levels by more than two orders of magnitude. Revise the Report accordingly.

Gallup Refinery Response: The text in Section 7.1 has been revised to note the referenced constituents exceed screening levels by more than two orders of magnitude.

11. Table 9, *Soil Cumulative Risk and Hazard Index Evaluation,* does not include all compounds detected at SWMU 10. Revise Table 9 to include all detected compounds in the Report; otherwise, provide an explanation for excluding the compounds from the cumulative risk evaluation.

Gallup Refinery Response: Pursuant to Comment No. 14 below, the cumulative risk evaluation has been removed from the report.

NMED Comment 5

According to Table 4, *Groundwater Field Measurements* and Appendix C, the screened intervals in temporary wells SWMU 10-5, SWMU 10-12, and SWMU 10-15 were submerged below the water table. When the screened interval is submerged below the water table, separate phase hydrocarbons

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(SPH) will likely not be detected, if present. Also, a well with a submerged screen will not provide accurate information regarding the vertical extent of the potential hydrocarbon smear zone. No revisions to the Report are necessary at this time; however, address the concern when proposing to install new temporary wells in future work plans.

Gallup Refinery Response: None required.

NMED Comment 6

In Section 3.2, *Collection and Management of Investigation Derived Waste,* the Permittee states,

"[a]ll purge water and decontamination water was disposed in the refinery wastewater system upstream of the API Separator." The API Separator separates free phase hydrocarbon from water, and the sanitary treatment pond addresses the dissolved phase organics, but it is not clear whether the wastewater treatment system is capable of removing metals from wastewater. Clarify whether metals are removed through the wastewater treatment system in the revised Report. Since the concentrations of metals exceed the screening levels in many groundwater samples, as indicated in Table 8, the groundwater must not be disposed to the wastewater treatment system unless it is capable of removing metals.

Gallup Refinery Response: The wastewater treatment system is designed to be capable of removing metals. This is noted in Section 3.2 of the report.

NMED Comment 7

In Section 4.4.1, *Groundwater Investigation,* the Permittee states, "[a]ll purge/development water was disposed at the bundle cleaning pad." Although the sewer leak at the bundle cleaning pad was repaired in 2013, other on-going leaks in the wastewater treatment system have not been repaired according to the *Revised Interim Measures Report Hydrocarbon Seep Area,* submitted in July 2016. Unless corrective measures have been already implemented, the investigation derived wastes (IDW) must not be discharged to the wastewater treatment system. Propose a work plan for handling IDW without using the on-site wastewater treatment system, as necessary.

Gallup Refinery Response: This same comment has been included in other recent NMED correspondence and has already been addressed.

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NMED Comment 8

The motor oil range organics concentration in the soil sample collected from boring SWMU 10-17 at depths between six and eight feet bgs is recorded as <4,776 mg/kg according to Table 7.

The residential and non-residential soil screening levels for motor oil range organics are 1,000 and 3,800 mg/kg, respectively. The referenced concentration {<4,776 mg/kg) is not acceptable and must be addressed as a data quality exception because the results exceed the screening levels. Similarly, several concentrations of semi-volatile organic compounds in the soil sample collected from boring SWMU 10-20 (2-2.5') are reported in the same manner. No revisions to the Report are necessary at this time; however, the Permittee must conduct analyses with appropriate dilution factors to avoid inappropriate reporting in the future or discuss the results in relation to the dilution factor and treat the results as screening level exceedances.

Gallup Refinery Response: Gallup has discussed this with the laboratory and they are following all appropriate requirements of the various analytical methods. However, it is not possible to choose a dilution factor based on a desired outcome, but rather the dilution factor is driven by the sample-specific concentrations of other constituents that mandate dilution of the sample in order for the sample to be analyzed. We will continue to work with the laboratory to ensure that they make every effort to meet the specified reporting limits

Although NMED did not require revisions at this time, the Report has been revised in Appendix E Quality Assurance/Quality Control to note these occurrences and the associated limitations on use of the affected data.

NMED Comment 9

The groundwater concentration maps for the dissolved metals constituents exceeding the screening levels are presented in the Report. Figures 24 through 26 depict the maps for arsenic, iron, manganese and nickel; however, the figure for the dissolved barium concentration is not included although concentrations exceed the screening level. The dissolved barium concentration map must be included in the revised Report.

Gallup Refinery Response: The dissolved barium concentrations have been added to Figure 18.

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NMED Comment 10

Although many total metals are detected above the screening levels in groundwater samples collected from the temporary wells, concentration maps are not provided in the Report. Provide the figures for total metals where concentrations exceed the respective screening levels in the revised Report.

Gallup Refinery Response: The subject results for total metals analyses have been added to Figures 17, 18, 19, 20, 21, and 22.

NMED Comment 11

According to Figure 27, *Chloride and Sulfate Groundwater Concentration Map,* the highest chloride and sulfate concentrations are detected in the groundwater sample collected from temporary well SWMU 10-3. Since temporary well SWMU 10-3 is located less than 30 feet from the wastewater pipeline and the concentrations are significantly higher than the others, the pipeline may be leaking. The Permittee must investigate the pipeline in the vicinity of SWMU 10-3. In the revised Report, propose to submit a work plan to investigate the pipeline leak.

Gallup Refinery Response: The only pipeline near temporary well SWMU 10-3 is an above-ground pipeline and there have not been any documented leaks in this area, which would have been easily observed and reported. No revision is made to the Report.

NMED Comment 12

The organic constituents whose concentrations were detected above the screening levels are discussed in Section 6.2, *Groundwater Analytical Results.* However, the discussion of toluene, xylenes, bromodichloromethane, 2,4-dimethylphenol, 2-rnethylphenol, 3+4-methylphenol and phenol are not included although the concentrations of these constituents exceed the screening levels according to Table 8. Discuss the exceedances in the revised Report. Additional groundwater concentration maps must be presented for the compounds with detected concentrations above screening levels. Provide the figures in the revised Report.

Gallup Refinery Response: The listed constituents have been included in the discussion in Section 6.2 and additional Figures 28, 29, 30, 32, 35, 36, and 37 have been added to the Report.

NMED Comment 13

In Section 6.2, the Permittee states, "[i]n addition to the SWMU 10 groundwater results, the MTBE concentration detected at boring location SWMU 1-37, which was installed during investigation of

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nearby SWMU 1, is also shown [in Figure 33] as it defines the eastern extent of MTBE concentration above the screening level (Western Refining Southwest, Inc., 2015)." The MTBE concentrations in groundwater samples collected from wells OAPIS-1 and NAPIS-2, located east of SWMU 10, consistently exceed the screening level of 143 ug/L according to the *2015 Annual Groundwater Monitoring Report;* thus, the observation of MTBE in boring SWMU 1-37 does not define the eastern extent of MTBE. Remove the statement from the Report and include a discussion of the MTBE source(s) in the revised Report. In addition, include the MTBE concentration observed in well OAPIS-1 in Figure 33, *MTBE Groundwater Concentration Map,* in the revised Report.

Gallup Refinery Response: The statement in Section 6.2 has been removed and a reference to up-gradient MTBE sources added. Well OAPIS-1 has been added to Figure 33.

NMED Comment 14

In Section 7 .1, *Conclusions,* the Permittee states, "[a] cumulative risk evaluation for soils is presented in Table 9." All discussions pertaining to cumulative risk evaluation must be removed from the revised Report. The risk must be reevaluated once the Permittee fully investigates SWMU 10 and all soils containing contaminant concentrations greater than screening levels are removed from the Sludge Pits (please see Comment 3).

Gallup Refinery Response: This discussion on cumulative risk has been removed.

NMED Comment 15

In Section 7.1, the Permittee states, "[t]here are no reported concentrations in soil for individual constituents that exceed the residential soil screening levels, with the exception of one sample

[SWMU 10-20 (2-2.5')], which exceeded for arsenic." The concentration of chromium in the sample collected from SWMU 10-20 (2-2.5') is recorded as 150 mg/kg, exceeding the residential soil screening level of 96.6 mg/kg. Similarly, the concentration of manganese in the sample collected from SWMU 10-21 (20-22') is recorded as 1,800 mg/kg, equivalent to the residential soil screening level of 1,800 mg/kg. Address the exceedances in the revised Report.

Gallup Refinery Response: The discussion in Section 7.1 has been revised to note that chromium also has concentrations above the residential soil screening level in the same sample [SWMU 10-20 (2-2.5')]. In regards to Manganese, no revision was made to the report, as the concentration is equal to the screening level, but does not exceed the screening level. Further, this sample was collected from a depth of 20 – 22', which is well below the depth of ten feet to which NMED applies their

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residential soil screening levels per the March 2017 *Risk Assessment Guidance for Site Investigations and Remediation.*

NMED Comment 16

In Section 7.1, the Permittee states, "DRO and/or MRO were detected at concentrations above the screening levels in the same soil samples [at borings SWMU 10-5, SWMU 10-8, SWMU 10-9, SWMU 10-10, SWMU 10-17, and SWMU 10-20] that had detections of individual organics constituents above screening levels with the single exception of SWMU 10-14 (6-8')." The

DRO concentrations in soil samples collected from borings SWMU 10-4 (2-4'), SWMU 10-11

(4-6') and SWMU 10-13 (6-8') are detected at 4,100, 3,800, and 2,300 mg/kg, respectively, exceeding the screening level of 1,000 mg/kg. These soil samples also contained concentrations of individual organic constituents above screening levels. Correct the statement to address the exceedances in soil samples collected from boring SWMU 10-4 (2-4'), SWMU 10-11 (4-6') and SWMU 10-13 (6-8') in the revised Report.

Gallup Refinery Response: See the response to Comment 3 above. With removal of the DAF soil screening levels the above discussion is no longer relevant and has been removed.

NMED Comment 17

In Section 7.1, the Permittee states, "[b]ased on the distribution of the MTBE concentrations and the hydraulic gradient, it appears that the elevated concentration of MTBE in boring SWMU 10-15 is more likely associated with the Aeration Basin than the former Sludge Pits." NMED concurs that MTBE likely did not come from the former Sludge Pits, because none of the soil samples contained MTBE. However, the source of MTBE is a far more complex issue; the Permittee must provide a basis for stating that MTBE was associated solely with the Aeration Basin (see Comment 13). The MTBE concentration in the groundwater sample collected from well GWM-1, located on the eastern perimeter of the Aeration Basin, has been detected at concentrations below the screening level; however, the MTBE concentration in the groundwater sample collected from well OAPIS-1, located east of the OAPIS and south of the Aeration Basin, has consistently exceeded the screening level. In addition, a large MTBE plume originating from the Marketing Tank area, located southeast of SWMU 10, has migrated to the west and northwest, and extends into the investigated area. Furthermore, the hydrocarbon seep area, sanitary lagoon, and unidentified leaking sewer lines may also be contributing to groundwater contamination beneath SWMU 10.

Gallup Refinery Response: See the response to Comment 13 above, the reference to the Aeration Basin as the only listed source has been removed in Section 7.1.

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NMED Comment 18

Most temporary wells that were removed after groundwater samples were collected within a few days. The wells should have been monitored for the presence of SPH. A sheen was observed in the groundwater collected from temporary well SWMU 10-14 during the purging event; however, the temporary well was immediately removed on the same day after purging and collecting groundwater samples. As the transport velocity of SPH may be slower compared to groundwater, temporary wells must be preserved and monitored for the presence of SPH for a minimum of seven days in the future.

Gallup Refinery Response: We will include this in future work plans.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Daniel J Statile

VP Gallup Refinery

cc K. Van Horn NMED

C. Chavez NMOCD

L. King, EPA Region 6

B. Moore Marathon Gallup Refinery

Mr. John E. Kieling, Chief
New Mexico Environmental Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87SOS-6303

RE: RESPONSE TO DISAPPROVAL
INVESTIGATION REPORT SOLID WASTE MANAGEMENT UNIT (SWMU)
NO. 10 SLUDGE PITS
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-16-001

Dear Mr. Kieling:

Gallup Refinery is in receipt of your letter of June 14, 2018, which provided comments on the referenced report, dated December 2016. The following responses address each of your comments.

NMED Comment 1
The Permittee's investigation of the Sludge Pits (SWMU 10) discovered widespread soil and groundwater contamination. The Permittee's use of a site-specific dilution attenuation factor (DAF) resulted in investigation beyond the boundary of the SWMU and collected data related to contamination from other sources. The Permittee's intent for the investigation is not clear and the original intent, to determine whether the Sludge Pits affected soils and groundwater, was not resolved. The Permittee must first determine the original location of the Sludge Pits and an investigation must be conducted to evaluate contaminant migration from the pits. Previous aerial photographs indicate that the Sludge Pits may be located north of the SWMU 10 location shown in Figure 2. Revise the boundary of SWMU 10 in Figure 2, *SWMU No. 10 Location Map* as necessary based on the aerial photographs.

Gallup Refinery Response: NMED suggest that contamination in soil from other sources was identified; however, there is no evidence of "other sources" based on the historical research of the area of SWMU 10, field observations during the investigation, or the chemical analyses from samples of soil. This issue was discussed with NMED in meetings held on May 2, 2018 and again on September 19, 2018. The following discussion provides a summary of the information discussed in the two aforementioned meetings.

The location of SWMU No. 10 cannot be currently discerned based on field observations of the land surface, as the SWMU was previously remediated to a limited extent as explained in Section 2.1 of the SWMU No. Investigation Work Plan. Historical aerial photos and historic site drawing were used to locate the former location of SWMU No. 10. Please see the enclosed historic photo of the area with reference lines that correspond with site physical features (i.e., aboveground pipeline corridor and eastern edge of Evaporation Pond No. 2.) that were present when SWMU No. 10 was in operation and remain at the site today. As shown in the photo, SWMU No. 10 can clearly be identified to the north and east of the intersecting reference lines.

Also noted is crude tank T-101, which is the closest large tank to the southeast of the SWMU No. 10. For reference, crude tank T-101 has a diameter of 110 feet. The description of the SWMU No. 10 presented in Section 2.1 of the Investigation Work Plan describes "two pits that covered an area of approximately 130 feet by 80 feet and 70 feet by 50 feet." As shown in the photo, one pit is visible that would approximate the 130 feet by 80 feet pit. This suggests the second pit is not visible in the historic photo, which is consistent with some of the historic descriptions that indicate the area was expanded from the initial "pit area." Although not clearly described in the available historical documentation, it is possible the operations changed from smaller deeper pits to larger shallower "drying beds" during the life of the SWMU, as was common practice at refineries operating during similar time periods. The second pit appears to be located to the west of the larger pit observed in the aerial photo, as significant concentrations of TPH were identified at depths of 4 – 6 feet below ground surface in soil borings 10 and 11, and there are no "other sources" in this area.

Recognizing the potential for the SWMU to cover a larger area than represented in the available historic photo, the Investigation Work Plan, which was approved by NMED with modifications on March 2, 2015, included provisions to allow for additional soil borings based on field observations. The relevant section of 4.1 is shown below.

> The proposed locations for soil borings/temporary wells are shown on Figure 7. As necessary, additional investigation of soils and groundwater willbe conducted to define the lateral extent of any identified releases. If there are indications of lateral migration of constituents away from the former location of the sludge pits within subsurface soils and/or groundwater, then additional borings/ temporary monitoring wells willbe completed within approximately 50 feet of the original boring location. Additional borings/temporary wells will continue to be added in a similar manner, as necessary, to define the lateral and vertical extent of impacts to soil and/or groundwater. Selection of additional sample locations willbe coordinated with NMED.

Comment No. 1 of NMED's March 2, 2015 Approval with Modifications letter states the following, "Figure 7 (Proposed Sampling Locations) depicts the proposed locations for borings, but none of the locations are labeled. In the Investigation Report provide a figure where the borings are identified. Additionally, re-locating several of the proposed locations may provide better coverage to compare to prior sampling analytical results exceeded the soil screening levels; however, it is difficult to determine historic sampling locations in comparison to the proposed locations using the figures provided in the Work Plan. Submittal of revised figures are not required, because the Permittee's sampling plan, as discussed in Section 4.1 (Investigation), allows for additional investigation to be conducted, if field results reveal that the lateral and vertical extent of contamination has not been documented."

Pursuant to the Investigation Work Plan and NMED's Approval with Modifications, Western completed additional soil borings/temporary wells based on field observations to define the boundaries of the SWMU and any potential migration of contaminants from the SWMU.

Regarding the intent of the investigation, the purpose of the investigation is clearly set forth in the Investigation Work Plan, which was reviewed and approved by NMED. We believe NMED's comment is related to the field implementation and are hopeful the discussion above addresses NMED's questions regarding the "intent" of the investigation. Figure 2, which shows the approximate location of SWMU No. 10, has been revised to more accurately reflect the field observations.

Additional discussion has been provided in Section 3.1.1 of the Report and the referenced aerial photo is provided in Appendix H.

NMED Comment 2

The Permittee's use of a site-specific DAF for comparison was inappropriate for several reasons. The DAF was calculated based on data obtained from the Aeration Basin, which is not related to the Sludge Pits other than by proximity. Additionally, since groundwater contamination beneath the Sludge Pits originates from various upgradient sources, and contamination is already present in the aquifer, the use of a site-specific DAF is not applicable. DAF is used to determine if contaminants in soil can migrate to groundwater, and in this case, groundwater is contaminated in the area. All discussions pertaining to a site-specific DAF must be removed from the revised Report. Use residential screening levels for comparison at this time. All tables and figures must be revised accordingly, and the soil/groundwater concentration maps must address all compounds exceeding residential screening levels. It should be noted that the use of residential screening levels results in fewer contaminants driving risk compared to the use of screening levels derived from a site-specific DAF.

Gallup Refinery Response: The reference to the DAF has removed from the Report (Executive Summary, Sections 5, 6.1 and 7.1) with the exception of a short explanation in Section 5 to note NMED's direction that the DAF is not applicable. The Table 7 has been revised to reflect comparisons to residential soil screening levels. There are now only two Figures for soils (13 and 14) with the exception of the figures for total petroleum hydrocarbons, which were unaffected. The soil tables retain the non-residential screening levels, but all highlighting has been revised to compare to residential screening levels. The report discussion is also focused on comparison to residential soil screening levels.

NMED Comment 3

The Permittee must delineate soil contamination within the boundary of SWMU 10. The proposed borings in Figure 35, *Proposed Soil Boring Map,* must aid in defining the boundaries of the Sludge Pits. Revise the boring locations in the revised Report, as necessary. The Permittee must propose to remediate the soil contamination (e.g., through soil excavation) based on the extent of soil contamination in a future work plan. The risk associated with migration of contaminants through soil to groundwater would be negligible after soil contamination is removed from and beneath the Sludge Pits.

Gallup Refinery Response: Pursuant to Comment 1 above ("use of a site-specific dilution attenuation factor (DAF) resulted in investigation beyond the boundary of the SWMU and collected data related to contamination from other sources . . .") no further investigation is proposed. It appears that NMED believes the existing borings have delineated the lateral extent of SMWU 10 and any potential releases from the SWMU, to the extent of possibly detecting releases from

other unassociated releases (e.g., the Old API Separator, release from the wastewater pipeline, etc.).

NMED Comment 4

There are multiple editorial issues in the Report. The following issues must be addressed in the revised Report:

1. The depth to groundwater in temporary well SWMU 10-14 is recorded as 12.50 feet below ground surface (bgs) according to Table 4, *Groundwater Field Measurements,* while total depth of the well appears to be 12 feet bgs according to Appendix C, *Boring Logs.* Correct the discrepancy in the revised Report.

Gallup Refinery Response: The depth of the boring for SWMU 10-14, as shown on the boring log included in Appendix C is 23 feet. No correction is required.

2. In Section 4.3.1, *Soil Investigation,* the Permittee states, "[a] claystone was encountered from 16.5 feet bgl - 19 feet bgl. The claystone was observed to be very stiff, dry, brown and gray. The claystone did not have an odor. The PID readings were 5 ppm [in boring SWMU 10-25]." Table 3, *Soil Boring Samples - Vapor Screening Results,* does not show the vapor screening results below fourteen feet bgs in boring SWMU 10-25.
   Revise Table 3 to include the PID data in the revised Report.

Gallup Refinery Response: The missing PID readings for the lower depth intervals have added to Table 3.

3. In Section 4.2.1, *Geology,* the Permittee states, "[a] second map (Figure 11) was prepared to show the current elevation on top of bedrock (Chin1e Group)." The ground elevation was not recorded in the boring logs in Appendix C. Provide the survey data for all borings or explain how the elevation on top of the bedrock was determined in the revised Report.

Gallup Refinery Response: The land surface elevations used to calculate the elevation on top of bedrock were estimated using the site topographic map, which was prepared based on a site-wide survey conducted by Precision Engineering in 2008. This is explained further in Section 4.2.1 of the Report.

4. The chromium concentration in the soil sample collected from SWMU 10-20 (2-2.5') exceeds residential and non-residential screening levels; however, the concentration is not highlighted to show the exceedance in Table 7. Highlight the exceedance in the revised Report.

Gallup Refinery Response: The subject value of 150 mg/kg was bolded in the table to note that the concentration exceeds the residential soil screening level. Highlighting was used in the table to identify concentrations that exceed the DAF number and this concentration did not exceed the DAF number, and thus was not highlighted. No revision is made to Table 7 per this comment. Table 7 is revised to remove the DAF values.

5. Table 8, *Groundwater Analytical Results Summary,* lists chloride, fluoride and sulfate in the category of total metals. They must be listed under a separate category for anions. Revise Table 8 accordingly.

Gallup Refinery Response: A separate category has been added for anions in Table 8.

6. Table 8 lists cyanide in the category of total metals. It must be listed under a separate category. Revise Table 8 accordingly.

Gallup Refinery Response: Cyanide is now reported in Table 8 under a separate category.

7. In Section 6.2, *Groundwater Analytical Results,* the Permittee states, "[1]methylnaphthalene was detected above the screening level of 11 ug/l in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at a concentration of 70 ug/l, 170 ug/l, and 120 ug/l, respectively." The 1-methylnaphthalane concentration in the groundwater sample collected from SWMU 10-25 is recorded as 110 ug/L in Figure 30, *1-Methylnaphthalene Groundwater Concentration Map.* Revise the figure to correct the discrepancy.

Gallup Refinery Response: Figure 30 (now Figure 26) has been revised to use the higher value of 120 ug/L.

8. In Section 6.2, the Permittee states, "[2]-methylnaphthalene was detected above the screening level of 36 ug/l in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at a concentration of 98 ug/l, 240 ug/l, and 180 ug/l, respectively." The 2-methylnaphthalane concentration in the groundwater sample collected from SWMU 10-25 is recorded as 140 ug/L in Figure 31, *2-Methylnaphthalene Groundwater Concentration Map.* Revise the figure to correct the discrepancy.

Gallup Refinery Response: The concentration of 2-methylnaphthalene has been revised to the higher value of 180 ug/l on Figure 31 (now Figure 27).

9. In the Executive Summary and Section 7.1, *Conclusions,* the Permittee states, "[t]hirteen organic constituents (1methylnaphthalene,2-methylnaphthalene, 1,2,4-trimethlybenzene, 1,3,5- trimethylbenzene, benzene, bromodichloromethane, MTBE, naphthalene, toluene, xylenes, 2,4-dimethylphenol, 3+4-methylphenol, and phenol) were detected in groundwater samples collected from soil borings at concentrations above screening levels." The 2-methylphenol concentrations in groundwater samples collected from temporary wells SWMU 10-20 and 10-25 also exceed the screening level according to Table 8, *Groundwater Analytical Results.* Revise the Report accordingly.

Gallup Refinery Response: The referenced discussions in the Executive Summary and Section 7.1 have been revised to note that 14 organic constituents, including 2-methylphenol, were detected above the groundwater screening levels.

10. In Section 7.1, the Permittee states, "[m]any of the reported concentrations are only slightly above the screening levels (i.e., generally less than one order of magnitude above the screening levels)." The benzene, 2,4-dimethylphenol, 3+4-methylphenol, 2-methylphenol and naphthalene concentrations exceed the screen levels by more than two orders of magnitude. Revise the Report accordingly.

Gallup Refinery Response: The text in Section 7.1 has been revised to note the referenced constituents exceed screening levels by more than two orders of magnitude.

11. Table 9, *Soil Cumulative Risk and Hazard Index Evaluation,* does not include all compounds detected at SWMU 10. Revise Table 9 to include all detected compounds in the Report; otherwise, provide an explanation for excluding the compounds from the cumulative risk evaluation.

Gallup Refinery Response: Pursuant to Comment No. 14 below, the cumulative risk evaluation has been removed from the report.

NMED Comment 5

According to Table 4, *Groundwater Field Measurements* and Appendix C, the screened intervals in temporary wells SWMU 10-5, SWMU 10-12, and SWMU 10-15 were submerged below the water table. When the screened interval is submerged below the water table, separate phase hydrocarbons (SPH) will likely not be detected, if present. Also, a well with a submerged screen will not provide accurate information regarding the vertical extent of the potential hydrocarbon smear zone. No revisions to the Report are necessary at this time; however, address the concern when proposing to install new temporary wells in future work plans.

Gallup Refinery Response: None required.

NMED Comment 6

In Section 3.2, *Collection and Management of Investigation Derived Waste,* the Permittee states, "[a]ll purge water and decontamination water was disposed in the refinery wastewater system upstream of the API Separator." The API Separator separates free phase hydrocarbon from water, and the sanitary treatment pond addresses the dissolved phase organics, but it is not clear whether the wastewater treatment system is capable of removing metals from wastewater. Clarify whether metals are removed through the wastewater treatment system in the revised Report. Since the concentrations of metals exceed the screening levels in many groundwater samples, as indicated in Table 8, the groundwater must not be disposed to the wastewater treatment system unless it is capable of removing metals.

Gallup Refinery Response: The wastewater treatment system is designed to be capable of removing metals. This is noted in Section 3.2 of the report.

NMED Comment 7

In Section 4.4.1, *Groundwater Investigation,* the Permittee states, "[a]ll purge/development water was disposed at the bundle cleaning pad." Although the sewer leak at the bundle cleaning pad was repaired in 2013, other on-going leaks in the wastewater treatment system have not been repaired according to the *Revised Interim Measures Report Hydrocarbon Seep Area,* submitted in July 2016. Unless corrective measures have been already implemented, the investigation derived wastes (IDW) must not be discharged to the wastewater treatment system. Propose a work plan for handling IDW without using the on-site wastewater treatment system, as necessary.

Gallup Refinery Response: This same comment has been included in other recent NMED correspondence and has already been addressed.

NMED Comment 8

The motor oil range organics concentration in the soil sample collected from boring SWMU 10-17 at depths between six and eight feet bgs is recorded as <4,776 mg/kg according to Table 7. The residential and non-residential soil screening levels for motor oil range organics are 1,000 and 3,800 mg/kg, respectively. The referenced concentration {<4,776 mg/kg) is not acceptable and must be addressed as a data quality exception because the results exceed the screening levels. Similarly, several concentrations of semi-volatile organic compounds in the soil sample collected from boring SWMU 10-20 (2-2.5') are reported in the same manner. No revisions to the Report are necessary at this time; however, the Permittee must conduct analyses with appropriate dilution factors to avoid inappropriate reporting in the future or discuss the results in relation to the dilution factor and treat the results as screening level exceedances.

Gallup Refinery Response: Gallup has discussed this with the laboratory and they are following all appropriate requirements of the various analytical methods. However, it is not possible to choose a dilution factor based on a desired outcome, but rather the dilution factor is driven by the sample-specific concentrations of other constituents that mandate dilution of the sample in order for the sample to be analyzed. We will continue to work with the laboratory to ensure that they make every effort to meet the specified reporting limits

Although NMED did not require revisions at this time, the Report has been revised in Appendix E Quality Assurance/Quality Control to note these occurrences and the associated limitations on use of the affected data.

NMED Comment 9

The groundwater concentration maps for the dissolved metals constituents exceeding the screening levels are presented in the Report. Figures 24 through 26 depict the maps for arsenic, iron, manganese and nickel; however, the figure for the dissolved barium concentration is not included although concentrations exceed the screening level. The dissolved barium concentration map must be included in the revised Report.

Gallup Refinery Response: The dissolved barium concentrations have been added to Figure 18.

NMED Comment 10

Although many total metals are detected above the screening levels in groundwater samples collected from the temporary wells, concentration maps are not provided in the Report. Provide the figures for total metals where concentrations exceed the respective screening levels in the revised Report.

Gallup Refinery Response: The subject results for total metals analyses have been added to Figures 17, 18, 19, 20, 21, and 22.

NMED Comment 11

According to Figure 27, *Chloride and Sulfate Groundwater Concentration Map,* the highest chloride and sulfate concentrations are detected in the groundwater sample collected from temporary well SWMU 10-3. Since temporary well SWMU 10-3 is located less than 30 feet from the wastewater pipeline and the concentrations are significantly higher than the others, the pipeline may be leaking. The Permittee must investigate the pipeline in the vicinity of SWMU 10-3. In the revised Report, propose to submit a work plan to investigate the pipeline leak.

Gallup Refinery Response: The only pipeline near temporary well SWMU 10-3 is an above-ground pipeline and there have not been any documented leaks in this area, which would have been easily observed and reported. No revision is made to the Report.

NMED Comment 12

The organic constituents whose concentrations were detected above the screening levels are discussed in Section 6.2, *Groundwater Analytical Results.* However, the discussion of toluene, xylenes, bromodichloromethane, 2,4-dimethylphenol, 2-rnethylphenol, 3+4-methylphenol and phenol are not included although the concentrations of these constituents exceed the screening levels according to Table 8. Discuss the exceedances in the revised Report. Additional groundwater concentration maps must be presented for the compounds with detected concentrations above screening levels. Provide the figures in the revised Report.

Gallup Refinery Response: The listed constituents have been included in the discussion in Section 6.2 and additional Figures 28, 29, 30, 32, 35, 36, and 37 have been added to the Report.

NMED Comment 13

In Section 6.2, the Permittee states, "[i]n addition to the SWMU 10 groundwater results, the MTBE concentration detected at boring location SWMU 1-37, which was installed during investigation of nearby SWMU 1, is also shown [in Figure 33] as it defines the eastern extent of MTBE concentration above the screening level (Western Refining Southwest, Inc., 2015)." The MTBE concentrations in groundwater samples collected from wells OAPIS-1 and NAPIS-2, located east of SWMU 10, consistently exceed the screening level of 143 ug/L according to the *2015 Annual Groundwater Monitoring Report;* thus, the observation of MTBE in boring SWMU 1-37 does not define the eastern extent of MTBE. Remove the statement from the Report and include a discussion of the MTBE source(s) in the revised Report. In addition, include the MTBE concentration observed in well OAPIS-1 in Figure 33, *MTBE Groundwater Concentration Map,* in the revised Report.

Gallup Refinery Response: The statement in Section 6.2 has been removed and a reference to up-gradient MTBE sources added. Well OAPIS-1 has been added to Figure 33.

NMED Comment 14

In Section 7 .1, *Conclusions,* the Permittee states, "[a] cumulative risk evaluation for soils is presented in Table 9." All discussions pertaining to cumulative risk evaluation must be removed from the revised Report. The risk must be reevaluated once the Permittee fully investigates SWMU 10 and all soils containing contaminant concentrations greater than screening levels are removed from the Sludge Pits (please see Comment 3).

Gallup Refinery Response: This discussion on cumulative risk has been removed.

NMED Comment 15

In Section 7.1, the Permittee states, "[t]here are no reported concentrations in soil for individual constituents that exceed the residential soil screening levels, with the exception of one sample [SWMU 10-20 (2-2.5')], which exceeded for arsenic." The concentration of chromium in the sample collected from SWMU 10-20 (2-2.5') is recorded as 150 mg/kg, exceeding the residential soil screening level of 96.6 mg/kg. Similarly, the concentration of manganese in the sample collected from SWMU 10-21 (20-22') is recorded as 1,800 mg/kg, equivalent to the residential soil screening level of 1,800 mg/kg. Address the exceedances in the revised Report.

Gallup Refinery Response: The discussion in Section 7.1 has been revised to note that chromium also has concentrations above the residential soil screening level in the same sample [SWMU 10-20 (2-2.5')]. In regards to Manganese, no revision was made to the report, as the concentration is equal to the screening level, but does not exceed the screening level. Further, this sample was collected from a depth of 20 – 22', which is well below the depth of ten feet to which NMED applies their residential soil screening levels per the March 2017 *Risk Assessment Guidance for Site Investigations and Remediation*.

NMED Comment 16

In Section 7.1, the Permittee states, "DRO and/or MRO were detected at concentrations above the screening levels in the same soil samples [at borings SWMU 10-5, SWMU 10-8, SWMU 10-9, SWMU 10-10, SWMU 10-17, and SWMU 10-20] that had detections of individual organics constituents above screening levels with the single exception of SWMU 10-14 (6-8')." The DRO concentrations in soil samples collected from borings SWMU 10-4 (2-4'), SWMU 10-11 (4-6') and SWMU 10-13 (6-8') are detected at 4,100, 3,800, and 2,300 mg/kg, respectively, exceeding the screening level of 1,000 mg/kg. These soil samples also contained concentrations of individual organic constituents above screening levels. Correct the statement to address the exceedances in soil samples collected from boring SWMU 10-4 (2-4'), SWMU 10-11 (4-6') and SWMU 10-13 (6-8') in the revised Report.

Gallup Refinery Response: See the response to Comment 3 above. With removal of the DAF soil screening levels the above discussion is no longer relevant and has been removed.

NMED Comment 17

In Section 7.1, the Permittee states, "[b]ased on the distribution of the MTBE concentrations and the hydraulic gradient, it appears that the elevated concentration of MTBE in boring SWMU 10-15 is more likely associated with the Aeration Basin than the former Sludge Pits." NMED concurs that MTBE likely did not come from the former Sludge Pits, because none of the soil samples contained MTBE. However, the source of MTBE is a far more complex issue; the Permittee must provide a basis for stating that MTBE was associated solely with the Aeration Basin (see Comment 13). The MTBE concentration in the groundwater sample collected from well GWM-1, located on the eastern perimeter of the Aeration Basin, has been detected at concentrations below the screening level; however, the MTBE concentration in the groundwater sample collected from well OAPIS-1, located east of the OAPIS and south of the Aeration Basin, has consistently exceeded the screening level. In addition, a large MTBE plume originating from the Marketing Tank area, located southeast of SWMU 10, has migrated to the west and northwest, and extends into the investigated area. Furthermore, the hydrocarbon seep area, sanitary lagoon, and unidentified leaking sewer lines may also be contributing to groundwater contamination beneath SWMU 10.

Gallup Refinery Response: See the response to Comment 13 above, the reference to the Aeration Basin as the only listed source has been removed in Section 7.1.

NMED Comment 18

Most temporary wells that were removed after groundwater samples were collected within a few days. The wells should have been monitored for the presence of SPH. A sheen was observed in the groundwater collected from temporary well SWMU 10-14 during the purging event; however, the temporary well was immediately removed on the same day after purging and collecting groundwater

samples. As the transport velocity of SPH may be slower compared to groundwater, temporary wells must be preserved and monitored for the presence of SPH for a minimum of seven days in the future.

Gallup Refinery Response: We will include this in future work plans.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Daniel J Statile
VP Gallup Refinery

cc K. Van Horn NMED
C. Chavez NMOCD
L. King, EPA Region 6
B. Moore Marathon Gallup Refinery

INVESTIGATION REPORT
Solid Waste Management Unit (SWMU)
No. 10 Sludge Pits

Western Refining

Gallup Refinery
Western Refining Southwest, Inc.
Gallup, New Mexico

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List of Acronyms

API	American Petroleum Institute
AOCs	areas of concern
BTEX	benzene, toluene, ethylbenzene, and xylene
bgl	below ground level (bgl)
btoc	below top of casing
CFR	Code of Federal Regulations
DRO	diesel range organics
DAF	dilution/attenuation factor
EPA	Environmental Protection Agency
gpm	gallons per minute
HI	hazard index
HSA	hollow-stem auger
IDW	investigation derived waste
LPG	liquefied petroleum gas
LTU	Land Treatment Unit
MADEP	Massachusetts Department of Environmental Protection
MCL	maximum contaminant level
msl	mean sea level
MW	monitoring well
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
RCRA	Resource Conservation and Recovery Act
PID	photoionization detector
PVC	polyvinyl chloride
SPH	separate phase hydrocarbon
SVOC	semi volatile organic compound
SWMUs	Solid Waste Management Units
TPH	total petroleum hydrocarbon
TVOC	total volatile organic content
TCLP	toxicity characteristic leaching procedure
USCS	unified soil classification system

VOC	volatile organic compound
WQCC	Water Quality Control Commission

Executive Summary

The Gallup Refinery, which is located 17 miles east of Gallup, New Mexico, has been in operation since the 1950s. Past inspections by State [New Mexico Environment Department (NMED)] and federal environmental inspectors have identified locations where releases to the environment may have occurred. These locations are generally referred to as Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs). Pursuant to the terms and conditions of the facility's Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit and 20.4.1.500 New Mexico Administrative Code (NMAC), this environmental site investigation was completed for SWMU No. 10 (Sludge Pits).

The activities completed include sampling and analysis of soils and groundwater throughout the location of the former Sludge Pits to determine current concentrations of any potential contaminants resulting from historical operations and to delineate any such historical releases. This area was previously investigated in 1990 and 1994 with the collection of numerous soil samples during the RCRA Facility Investigation (RFI). The current investigation began on April 28, 2015 and continued through September 21, 2016. This included the completion of 25 soil borings with 73 soil samples (excluding additional quality assurance samples) collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons, and metals). Temporary well completions were installed in 11 boreholes where saturation was encountered. Eleven groundwater samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons (TPH), metals, and inorganic/general water quality parameters).

At the former Sludge Pits, two metals (arsenic and chromium), diesel range organics, and motor oil range organics were detected in soils at concentrations above the residential soil screening levels. It is possible that some of these detections are reflective of naturally occurring concentrations but a site-specific metals background study will be required to make this determination.

There were numerous inorganic constituents in the totals analyses (arsenic, barium, beryllium, chromium (hexavalent), chromium (total), cobalt, cyanide, iron, lead, manganese, nickel, vanadium,

chloride, and sulfate) detected at concentrations above residential/tap water screening levels in groundwater samples collected from the temporary well completions. At least one of these exceedances of screening levels for inorganic constituents occurred in every groundwater sample analyzed. Only arsenic, barium, iron, manganese, and nickel were detected at concentrations above screening levels in the dissolved analyses. Fourteen organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene,1,3,5-trimethylbenzene, benzene, bromodichloromethane, MTBE, naphthalene, toluene, xylenes, 2,4-dimethylphenol, 2-methylphenol, 3+4-methylphenol, and phenol) were detected at concentrations above screening levels in seven groundwater samples collected from soil borings SWMU 10-5, SWMU 10-11, SWMU 10-12, SWMU 10-15, SWMU 10-20, SWMU 10-21, and SWMU 10-25.

No additional soil borings are recommended at this time; however, a separate investigation is recommended to evaluate naturally occurring concentrations of inorganic constituents in soil.

Section 1
Introduction

The Gallup Refinery is located approximately 17 miles east of Gallup, New Mexico along the north side of Interstate Highway I-40 in McKinley County. The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Gallup Refinery property covers approximately 810 acres. Figure 1 presents the refinery location and the regional vicinity, which is characterized as high desert plain comprised primarily of public lands used for grazing by cattle and sheep.

The Gallup Refinery generally processes crude oil from the Four Corners area transported to the facility by pipeline or tanker truck. Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, alkylation, isomerization, sulfur recovery, merox treater, and hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

The area of investigation that is the subject of this report is shown on Figure 2 for the Sludge Pits (SWMU No. 10). The purpose of the site investigation is to determine and evaluate the presence, nature, and extent of releases of contaminants in accordance with 20.4.1.500 NMAC incorporating 40 Code of Federal Regulations (CFR) Section 264.101. The investigation was completed pursuant to the SWMU No. 10 Investigation Work Plan dated September 2014 (approved with modification March 2, 2015).

Section 2 presents background information for SWMU No. 10, including a review of historical waste management activities to help identity the types of waste handled, sources of releases, and previously known impacts to the environment. Section 3 describes the scope of work completed during the site investigation, including completion of soil borings, installation of temporary monitoring wells, and sample collection. The fourth section of the report explains the results of the field investigation, including the general surface and subsurface conditions and detailed site-specific information acquired during subsurface investigations. Section 5 explains the regulatory standards that are used for comparison to the analytical results and Section 6 presents the analytical results of soil and groundwater samples analyzed for volatile and semi-volatile organic compounds, TPH, metals, and inorganic/general chemistry constituents. The results of these analyses are compared

to applicable State or federal screening levels. Section 7 summarizes and provides an evaluation of the potential impacts and provides recommendations for any future actions.

Section 2
Background

This section presents background information for the Sludge Pits (SWMU No. 10) including a review of historical waste management activities to identity the following:

- Type and characteristics of waste and contaminants handled in the SWMU;
- Known and possible sources of impacts;
- History of releases; and
- Known extent of impacts prior to the current investigation.

2.1 Sludge Pits (SWMU No. 10)

The Sludge Pits were originally included as a SWMU in the 1988 Hazardous and Solid Waste Act (HSWA) permit and subsequently included for investigation in the 1990 RCRA Facility Investigation (RFI) Work Plan.

2.2 Operational History

The Sludge Pits were put into service in 1958 and were removed from service in 1980, when the sludge was removed and the pit area was covered with a layer of soil. The source of the fill soil is unknown, but the refinery has historically sourced fill from on-site borrow areas that were not used for site operations. The exact date in 1980 of the removal activity is unknown but the sludge materials in the pits were removed and placed in the RCRA Permitted Land Treatment Unit after the pits were removed from service (Geoscience Consultants, Ltd., 1985). The volume of materials removed is unknown. There were two pits that covered an area of approximately 130 feet by 80 feet and 70 feet by 50 feet with a depth of 2 feet (Figure 2). The pits were used to contain oily waste removed from the API Separator.

An analysis of metals in the refinery wastewater, which flowed through the API Separator, was conducted in July and August 1980. A copy of the summarized results is included in Appendix F (Geoscience Consultants, Ltd., 1985). The metal with the highest concentration is chromium. The sample with the highest chromium concentration was the cooling water tower blowdown. The results are not speciated between chromium III and chromium VI. The fact that the highest concentration was reported at the cooling tower could indicate that at least one source of the chromium was the

cooling tower. It was a common practice during that time period to use chromium VI as a corrosion inhibitor in cooling tower operations and chromate is reported to have been used at the cooling towers (EPA, 1987). An analysis of the separator sludge was conducted in March 1984 and while it did report total chromium at 0.036 mg/l, it did not detect the presence of chromium VI (Appendix F).

2.3 Historical Site Investigations

In 1990, during the Phase I RFI eight soil borings (RFI1001V through RFI1008V) were completed to depths of 13 feet below ground surface (bgs) (Figure 3) (Giant Refining Company, 1991). Soil samples were collected from depths of 0.0 feet bgs, 3.0 feet bgs, 6.0 feet bgs, 9.0 feet bgs, and 12.5 feet bgs. The soil samples were analyzed for metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, mercury, potassium, selenium, vanadium, and zinc), volatile organic compounds (VOCs), and semi volatile organic compounds (SVOCs) and the results are presented in Table 1. For comparison the NMED soil screening levels (*Risk Assessment Guidance for Site Investigation and Remediation*, dated February 2012) and EPA Regional Screening Levels are also included in Tables 1 and 2. Based on the detection of constituents in the samples collected in 1990, EPA directed that deeper samples be collected from the same area. As shown on Figure 4, eight additional soil borings (RFI1014V through RFI1021V) were drilled to depths of 25 feet bgs using hollow-stem augers with soil samples collected at depths of 19.0 feet bgs and 25.0 feet bgs (Giant Refining Company, 1994). The soil samples were analyzed for VOCs, SVOCs, and metals and the results are summarized in Table 2.

The analytical results for the soil samples collected in 1990 indicated the presence of arsenic, barium, cadmium, chromium (compared to chromium VI screening levels), cobalt, copper, mercury, benzene, ethylbenzene, toluene, xylenes, 2,4-dimethylphenol, 2-methylnaphthalene, o-cresol, m&p-cresol, fluorene, naphthalene, and phenol at concentrations above screening levels. The metals were initially compared to background concentrations in the 1991 RFI report; however, NMED has not approved background concentrations for metals and thus it is not currently known how the reported metals concentrations compare to naturally occurring concentrations. The metals were found at concentrations above screening levels in all samples, in particular for chromium when compared to chromium VI screening levels and cobalt. The soil samples collected in 1990 were not analyzed to determine the valence state of the chromium, but rather it was reported as total chromium. The organic constituents with concentrations above the screening levels were detected in samples collected at boring locations RFI1002 at a depth of 3 feet bgs, RFI1004 from depths of 3 feet bgs to 9 feet bgs, and RFI1005 from depths of 6 feet bgs to 12.5 feet bgs.

The analytical results for the soil samples collected in 1994 indicated the presence of barium and di-n-butyl phthalate at concentrations above their respective screening levels. Barium was detected in all but one soil sample (RFI1015V25.0) above the screening level of 300 mg/kg. Di-n-butyl phthalate was detected at concentrations above the screening level (7.0 mg/kg) in four soil samples (RIF1018V19.0, RFI1019V25.0, RIF1021V19.0, and RFI1021V25.0). Di-n-butyl phthalate is a phthalate ester (plasticizer) and is considered by EPA to be a common laboratory contaminant (EPA, 1989).

Giant proposed to implement the corrective action plan (in-place bioremediation) that had previously been submitted to EPA in February 1993 and approved, with modifications, by EPA on January 7, 1994. There is no record of additional testing of soils to evaluate the effectiveness of in-place bioremediation after EPA's approval of the corrective action plan. During the week of March 23, 1998, an on-site inspection was conducted by Practical Environmental Services, Inc. in support of preparation of a RCRA Post-Closure Care Permit for the Gallup Refinery Land Treatment Unit. The Summary Report is included as Appendix B of the 2014 SWMU 10 Investigation Work Plan (Western Refining Southwest, Inc., 2014). The observations were as follows:

- The sludge pits area was observed to be vacant and inactive. No sign of soil staining or residual waste was evident at or in the vicinity of the site;
- Native shrubs and grasses were observed growing throughout the general vicinity. No signs of distress were evident; and
- Local soil in the vicinity of the sludge pits is bentonitic clays and silts. Similar soil strata from a neighboring SWMU exhibited a hydraulic conductivity of less than 10^{-7} cm/sec.

Section 3
Scope of Activities

3.1 Soil Boring, Temporary Monitoring Well Installation and Sample Collection

Pursuant to the approved Investigation Work Plan, an investigation of soils and groundwater was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil borings and temporary monitoring wells were installed at the Sludge Pits (Figure 7).

As outlined in the Investigation Work Plan, there is the potential for constituents to have been released to soils at known locations and therefore a judgmental sampling design was implemented.

3.1.1 Site Investigation

The scope of work for the investigation at the Sludge Pits consisted of the installation of a minimum of ten soil borings throughout the area of the former Sludge Pits. Borings were scheduled to be drilled to a minimum depth of 20 feet or to the top of bedrock. The scope of work required the collection of a groundwater sample if groundwater was encountered. During the investigation 15 additional soil borings (eight were completed as temporary monitoring wells) were added to the scope in an effort to delineate the extent of impacted soils as observed visually, from the results field screening using a photoionization detector (PID), or elevated concentrations in initial laboratory analytical reports. This includes borings SWMU 10-11 through SWMU 10-25, which were completed to the south, west, north, and northeast of the original area of investigation to further define the lateral extent of potential impacts. As noted in the Investigation Work Plan, there were two separate pits described as being approximately 130 feet by 80 feet and 70 feet by 50 feet. The larger pit was identified on a historic aerial photo and was used to help locate the initial 10 soil borings proposed in the Investigation Work Plan (Appendix H). There are reference lines on the historic aerial photo using physical site features that were present in the photo and that are still present. The same reference lines are shown on the new Site Location Map, which is also included in Appendix H along with a map showing boring locations. The additional soil borings were necessary to investigate the location of the second pit, which was identified to the west of the larger pit shown in the aerial photo, and to better define the overall SWMU boundary and potential releases from the SWMU.

Seventy three soil samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents including volatile and semi-volatile organics, total petroleum (i.e., gasoline, diesel, and motor oil range) hydrocarbons, Skinner List metals, chromium VI, iron, and manganese.

Soil samples were collected at the 25 locations shown on Figure 7. Twenty soil borings were advanced using hollow stem augers. Eight of these borings were on the original scope of work. Twelve borings completed using hollow stem augers were added during the investigation. Temporary wells were installed in 10 of these boreholes and groundwater was subsequently sampled. The following list provides a summary of the soil borings advanced using hollow stem augers:

- SWMU 10-1; advanced to 20 feet below ground level (bgl); temporary well installed;
- SWMU 10-3; advanced to 20 feet bgl; temporary well installed;
- SWMU 10-4; advanced to 20 feet bgl;
- SWMU 10-5; advanced to 24 feet bgl; temporary well installed;
- SWMU 10-7; advanced to 20 feet bgl;
- SWMU 10-8; advanced to 20 feet bgl;
- SWMU 10-9; advanced to 20 feet bgl;
- SWMU 10-10; advanced to 20 feet bgl;
- SWMU 10-11; additional boring; advanced to 20 feet bgl; temporary well installed;
- SWMU 10-12; additional boring; advanced to 22 feet bgl; temporary well installed;
- SWMU 10-13; additional boring; advanced to 20 feet bgl;
- SWMU 10-14; additional boring; advanced to 23 feet bgl; temporary well installed;
- SWMU 10-15; additional boring; advanced to 20 feet bgl; temporary well installed
- SWMU 10-18; additional boring; advanced to 20 feet bgl;
- SWMU 10-19; additional boring; advanced to 20 feet bgl;
- SWMU 10-20; additional boring; advanced to 22 feet bgl; temporary well installed;
- SWMU 10-21; additional boring; advanced to 22 feet bgl; temporary well installed;
- SWMU 10-23; additional boring; advanced to 17 feet bgl;
- SWMU 10-24; additional boring; advanced to 17 feet bgl; and
- SWMU 10-25; additional boring; advanced to 19 feet bgl; temporary well installed.

Five soil borings were advanced using a hand auger. This deviation from the Investigation Work Plan was necessary when the soil boring location was not accessible to the drilling rig (e.g., uneven

terrain, overhead electrical lines, and below grade utility lines). Two of these soil borings were on the original scope of work. Three of the soil borings completed with a hand auger were added during the investigation. A temporary well was installed in one of the boreholes and groundwater was subsequently sampled. The following list provides a summary of the soil borings advanced using a hand augers:

- SWMU 10-2; advanced to 4 feet bgl (refusal);
- SWMU 10-6; advanced to 12 feet bgl (refusal);
- SWMU 10-16; additional boring; advanced to 9 feet bgl (refusal); temporary well installed;
- SWMU 10-17; additional boring; advanced to 8 feet bgl (refusal); and
- SWMU 10-22; additional boring; advanced to 9 feet bgl.

Groundwater samples were collected from 11 temporary well completions. The groundwater samples were analyzed for volatile and semi-volatile organics, total petroleum (i.e., gasoline, diesel, and motor oil range) hydrocarbons, Skinner List metals, chromium VI, iron, manganese, chloride, fluoride, and sulfate. The following list provides a brief summary of the groundwater sample collection.

- SWMU 10-1; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-3; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-5; sampled only due to slow recharge rate; yielded enough water for a full analytical suite;
- SWMU 10-11; developed and sampled; yielded enough water for a full analytical suite; sheen observed on purge water;
- SWMU 10-12; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-14; developed and sampled; yielded enough water for a full analytical suite; sheen observed on purge water;
- SWMU 10-15; developed and sampled; yielded enough water for a full analytical suite; and
- SWMU 10-16; sampled only due to a small water column in the temporary well completion; yielded enough water for only VOCs, SVOCs, and gasoline, diesel, and motor oil range petroleum hydrocarbons analyses;
- SWMU 10-20; developed and sampled; yielded enough water for a full analytical suite;

- SWMU 10-21; sampled only due to a small water column in the temporary well completion; yielded enough water for only VOCs, SVOCs, and gasoline, diesel, and motor oil range petroleum hydrocarbons analyses; and
- SWMU 10-25; developed and sampled; yielded enough water for a full analytical suite.

3.2 Collection and Management of Investigation Derived Waste

Drill cuttings, excess sample material and decontamination fluids, and all other investigation derived waste (IDW) associated with soil borings were contained and characterized using methods based on the boring locations and type of contaminants suspected or encountered. All drill cuttings generated during the investigation at the Sludge Pits were collected and put into 55-gallon drums. A composite sample of 24 drums generated during the May 2015 sampling event (SWMU 10-1 through SWMU 10-17) was collected using a decontaminated stainless steel spoon and sent to Hall Environmental Laboratory for waste characterization analysis. The sample was analyzed for the following:

- Reactivity – Cyanide (SW846 CH7);
- Reactivity – Sulfide (SW846 CH7);
- Ignitability (Method 1030);
- Corrosivity – pH (Method 9045);
- Anions (Method 300.0);
- RCRA 8 (TCLP) Metals (Method 6010B);
- Additional Metals (Method 6010B) (Calcium, Magnesium, Potassium; and Sodium);
- Diesel Range Organics (Method 8015B);
- Motor Oil Range Organics (Method 8015B);
- Gasoline Range Organics (Method 8015B);
- TCLP Volatiles (Method 1311/8260B); and
- TCLP Semi-volatiles (Method 1311/8270C).

The Hall analytical report (#1505A00) is included in Appendix D. Based on the analysis, 24 non-hazardous/non-DOT regulated drums (4,384 pounds) were shipped off-site to Advanced Chemical Treatment Facility for disposal on June 16, 2015. An additional 15 drums were generated during the May 2016 sampling event (SWMU 10-18 through SWMU 10-22). This generated 11,000 pounds of non-hazardous/non-DOT regulated soil that was shipped off-site to Advanced Chemical Treatment Facility for disposal on August 1, 2016.

Copies of the waste manifests are included in Appendix A. All purge water and decontamination water were disposed in the refinery wastewater system upstream of the API Separator. This allows the disposed water to pass through the wastewater treatment system that is designed to be capable of addressing site-related chemicals, including organics and metals.

3.3 Surveys

A global positioning system receiver was used to record the coordinates of each soil boring. These coordinates were recorded on the field boring logs.

Section 4
Field Investigation Results

This section provides a summary of the surface and subsurface conditions at the refinery, including the area near the Sludge Pits (SWMU No. 10). A discussion is included on the installation of soil borings, field screening of soils, and collection of soil samples for analysis. This is followed by a description of the installation of temporary well completions and the collection of groundwater samples.

4.1 Surface Conditions

A topographic map of the area near the Sludge Pits is included as Figure 5. Local site topographic features include high ground in the southeast gradually decreasing to lowland fluvial plain in the northwest. Elevations on the refinery property range from 7,040 feet to 6,860 feet. The area of the site near SWMU No. 10 is at an approximate elevation of 6,910 feet to 6,900 feet above mean sea level (msl).

The McKinley County soil survey identifies the soil in the area of SWMU No. 10 as primarily the Simitarq-Celavar sandy loams (USDA, 2005). The Simitarq-Celavar soils are well drained with a conservative permeability of 0.20 in/hr and minimal salinity. Simitarq soils have nearly neutral pH values ranging from 7.2 to 7.4 standard units.

Regional surface water features include the refinery evaporation ponds and aeration lagoons and a number of small ponds. The site is located in the Puerco River valley, north of the Zuni Uplift with overland flows directed northward to the tributaries of the Puerco River. The Puerco River continues to the west to the confluence with the Little Colorado River. The South Fork of the Puerco River is intermittent and retains flow only during and immediately following precipitation events.

4.2 Subsurface Conditions

During the utilities clearance of the Sludge Pit area several underground pipelines were detected. The depth of these pipelines is unknown. It is not known whether these pipelines are active or inactive.

4.2.1 Geology

The shallow subsurface soils consist of fluvial and alluvial deposits comprised of clay and silt with minor inter-bedded sand layers. The diverse properties and complex, irregular stratigraphy of the surface soils across the site cause a wide range of hydraulic conductivity ranging from less than 10^{-2} cm/sec for gravely sands immediately overlying the Petrified Forest Formation to 10^{-8} cm/sec in the clay soils located near the surface (Western Refining, 2009). Generally, shallow groundwater at the refinery follows the upper contact of the Chinle Group with prevailing flow from the southeast to the northwest, with some flow potentially to the northeast on the northeastern portion of the refinery property.

The Quaternary alluvium, which occurs at the land surface in the area of the former Sludge Pits, is mapped regionally as a narrow band trending west-northwest and running just north of I-40 (Figure 6). The Quaternary alluvium is thought to be the parent material of the Simitarq-Celavar soils discussed above in Section 4.1. Two cross sections of the shallow subsurface in the immediate vicinity of the Sludge Pits are included as Figures 8 and Figure 9. Figure 7 shows the location of the two cross sections. As shown on the cross sections, the predominant lithology is silty clay with lesser amounts of sand in varying proportions. The predominant occurrence of sand is in the western portion of the area of investigation.

An isopach map of the sand thickness is included as Figure 10. This reflects lesser sand in the eastern portion of the investigation area with a thickness up to 9 feet measured in two borings (SWMU 10-11 and SWMU 10-14) in the western area. A second map (Figure 11 – Estimated Elevation on Top of Bedrock) was prepared to show the current elevation on top of the bedrock (Chinle Group). The land surface elevations used to prepare this map are estimated elevations taken from the site topographic map prepared by Precision Engineering, who prepared a site-wide survey in 2008. This surface is probably reflective of the land surface present when the Quaternary alluvium was deposited, but may have been altered when the pits were excavated. A comparison between the sand isopach map and the map of the bedrock surface elevation indicates a general lack of sand across most of the area with the highest surface elevations. There is a prominent northwest-southeast trending ridge on the elevation map with sand present only in boring SWMU 10-17 along this feature. The sand interval present in boring SWMU 10-17 is higher relative to the stratigraphically equivalent sand in other borings (e.g., SWMU 10-11 and SWMU 10-12) and is not saturated in boring SWMU 10-17. The surface elevation of the bedrock is not totally controlling of

the sand distribution, as sand is also absent in the area of SWMU 10-5 even though there is a significant drop in the surface elevation at this location.

Subcropping beneath the Quaternary alluvium is the Triassic Chinle Group (Figure 6). The stratigraphy of the Chinle Group was described in detail for the nearby Fort Wingate quadrangle by Lucas et al, 1997. The Painted Desert Member of the Petrified Forest Formation is the uppermost member of the Chinle Group present in the area of the refinery. The Painted Desert Member is described as reddish-brown and grayish red mudstone with minor beds of resistant, laminated or crossbedded, litharenite. This is consistent with the bedrock encountered at the refinery, as depicted on cross sections A-A' and B-B' (Figures 8 and 9). Beneath the Painted Desert Member is the Sonsela Member, which is described by Lucas et al (1997) as gray to yellowish-brown, fine-grained to conglomeratic, crossbedded sandstone. The base of the Sonsela Member is recognized as a basin wide unconformity, which was termed the Tr-4 unconformity (Heckert and Lucas, 1996). The Blue Mesa Member, which underlies the Sonsela Member, is the lowest member of the Petrified Forest Formation. The Blue Mesa Member is described as mostly purple and greenish-gray mudstone.

4.2.2 Hydrogeology

Generally, the potentiometric surface of the shallow groundwater at the refinery follows the land surface (Figure 12). The presence of shallow groundwater in the area of SWMU 10 appears to be controlled by the elevation of the bedrock surface and the presence or absence of permeable sediments (sand vs. clay). Of the 25 soil borings completed, all but two (SWMU 10-2 and SWMU 10-17) were of sufficient depth to have identified the presence of saturation; however, only 11 borings did encounter saturation. Three (SWMU10-1, SWMU 10-3, and SWMU 10-5) of these 11 soil borings, which are located in the eastern portion of the investigation area, did not encounter any significant sand intervals but rather encountered saturation within predominantly silty/sandy clay that is not anticipated to have sufficient permeability to produce practically usable quantities of groundwater. In fact, the yield of water was so low at SWMU 10-5, SWMU 10-16, and SWMU 10-21 that it was not practicable to fully develop these wells and at SWMU 10-16 and SWMU 10-21, there was not a sufficient volume of water to support analyses for all analytes. The primary occurrence of shallow groundwater was identified in the western portion of the investigation area in borings SWMU 10-11, SWMU 10-12, and SWMU 10-14 where significant sand was present and the elevation on top of the bedrock was lower.

The diverse properties and complex, irregular stratigraphy of the Quaternary alluvium across the refinery cause a wide range of hydraulic conductivity ranging from less than 10^{-2} cm/sec for gravel like sands immediately overlying the Painted Desert Member to 10^{-8} cm/sec in the clay soils located near the surface (Western Refining, 2009). Permeability tests performed on the Quaternary alluvium beneath the nearby Land Treatment Unit (LTU) indicated an average permeability of 1.9E-05 cm/sec (Appendix G). Permeability tests performed on soils in the area of the firewater pond indicated an average permeability of 1.1E-07 cm/sec (Appendix G).

As described above, the bedrock (i.e., Petrified Forest Formation) is mainly composed of low permeability materials (e.g., mudstone) with the exception of the Sonsela Member and some thinner sandstones within the overlying Painted Desert Member. Yield tests, including slug tests and pumping tests have been performed at the refinery to estimate the hydraulic conductivity of the Painted Desert Member (Appendix G). A slug test performed on July 3, 1984 in well OW-4 indicated a hydraulic conductivity of 4.0E-7 cm/sec. A pump test was performed in well OW-24 on February 20, 1985 and it yielded a hydraulic conductivity of 2.5E-7 cm/sec. The Painted Desert Member appears to be a competent aquitard to reduce the potential for downward migration of contaminants from groundwater that may occur within the overlying Quaternary alluvium.

The Sonsela Member is identified as the uppermost aquifer for RCRA monitoring purposes at the LTU because the overlying groundwater bearing units are not capable of supplying sufficient quantities of groundwater to meet the definitions of an aquifer. Wells completed in a thinner permeable sandstone layer within the Painted Desert Member are also monitored near the LTU as a potential early warning network. The Sonsela's highest point occurs southeast of the site and slopes downward to the northwest as it passes under the refinery. The Sonsela Member forms a water-bearing reservoir with artesian conditions throughout the central and western portions of the refinery property (Western, 2009). Aquifer test of the Sonsela Member conducted northeast of Prewitt indicated a transmissivity of greater than 100 ft^2/day (Stone and others, 1983). Yield tests conducted at the site have shown a much lower hydraulic conductivity of 0.34 ft/day (1.2E-04 cm/sec) (Appendix G).

4.3 Exploratory Drilling Investigations, Soil Sampling and Boring Abandonment

This subsection provides a description of surface and subsurface investigations to locate potential impacts to soils and also the potential for soil impacts to have migrated vertically to the underlying

groundwater. This includes soil field screening results, soil sampling intervals and methods for detection of surface and subsurface impacts in soils.

Discrete soil samples for laboratory analyses were scheduled for collection at the following intervals:

- 0.0-0.5 feet (at soil borings with evidence of impacts near the land surface);
- 2.0-2.5 feet or the top of native soil if identifiable (at all soil borings);
- >2.0 feet (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screening);
- From the bottom of each borehole (all soil borings);
- From the 0.5 foot interval at the top of saturation (applicable only to borings that reached saturation); and
- additional intervals as determined based on field screening results.

A description of the field screening and soil sampling procedures are presented in Appendix B – Field Methods. Copies of the boring logs are provided in Appendix D. In addition to being included on the soil boring logs, the soil vapor (i.e., headspace) screening results are summarized in Table 3. The locations of the soil borings appear on Figure 7.

4.3.1 Soil Investigation

Twenty soil borings were advanced using the hollow-stem auger (HSA) method and all of these soil borings were drilled to the bedrock (claystone/mudstone). Five soil borings were advanced using a hand auger due to accessibility limitations for the drilling rig and four of these borings did not reach bedrock. Boring SWMU10-22, which was completed using a hand auger, was drilled to the top of bedrock. The drilling equipment and hand auger equipment was decontaminated between each borehole, as described in Appendix B. Detailed soil boring logs are included in Appendix C. The soil boring logs describe the subsurface lithology, the presence of saturation, the field screening results, and any temporary well construction details. The installation of soil borings and collection of soil samples are discussed below in numerical order.

SWMU 10-1

On April 28, 2015 the drilling rig was set up on location SWMU 10-1. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – Photoionization Detector (PID) reading - 25.7 ppm;
- 4 feet bgl - 6 feet bgl – Highest PID reading - 30.9 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of borehole, PID reading - 3.6 ppm.

No petroleum hydrocarbon odor or particularly elevated PID readings were detected. There was no apparent discoloration (i.e., black staining) of the soils.

The lithology encountered consisted of a surficial silty clay from 0 feet bgl - 4 feet bgl with the PID readings ranging from 14.8 ppm to 25.7 ppm. A soft, low plastic sandy clay was encountered from 4 feet bgl - 8 feet bgl. The sandy clay was damp to very moist and appeared to be saturated at 6 feet bgl. The PID readings range from 30.9 ppm to 26.6 ppm. A firm, high plastic clay was encountered from 8 feet bgl - 14 feet bgl with PID readings ranging from 20.7 ppm to 9.2 ppm. A claystone/mudstone (Chinle Group- Painted Desert Member) was encountered from 14 feet bgl – 20 feet bgl. The claystone/mudstone was observed to be low plasticity, very stiff/hard, light reddish brown, and dry. No petroleum odors were detected in this interval. The PID readings ranging from 11.3 ppm to 3.6 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet to 14 feet. On April 29, 2015 the well was gauged, developed and sampled. On May 1, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-2

On May 4, 2015 sample collection at SWMU 10-2 was accomplished using a hand auger. Overhead utility lines and uneven terrain prevented mobilization of the HSA drilling rig to this location. Two soil samples were collected from 0 feet bgl - 2 feet bgl and 2 feet bgl – 4 feet bgl. No petroleum odors were detected. The PID readings were 10.5 ppm (0 feet bgl – 2 feet bgl) and 8.0 ppm (2 feet bgl - 4 feet bgl).

The lithology encountered consisted of surficial silty clay from 0 feet bgl - 2 feet bgl. This clay was low to moderately plastic, stiff, damp, brown, and gravelly. A moderate to high plastic clay was observed from 2 feet bgl – 4 feet bgl. The clay was very stiff, damp, and reddish brown.

Sampling was terminated at 4 feet bgl due to auger refusal. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice. The borehole was grouted on May 14, 2015.

SWMU 10-3

On April 28, 2015 the drilling rig was set up on location SWMU 10-3. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – PID reading - 24.2 ppm;
- 6 feet bgl - 8 feet bgl – Highest PID reading below 2 feet bgl – 4 feet bgl - 18.9 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of borehole, PID reading – 2.5 ppm.

No petroleum hydrocarbon odor or elevated PID readings were observed. There was no apparent discoloration of the soils.

The lithology encountered consisted of a silty clay from 0 - 8 feet bgl with the PID readings ranging from 12.9 ppm to 24.2 ppm. A soft, low plastic sandy clay was encountered from 8 feet bgl - 12 feet bgl. The sandy clay was damp to very moist and appeared to be saturated at 8 feet bgl. The PID readings range from 17.6 ppm to 13.7 ppm. A firm, moderately plastic, damp, brown clay was encountered from 12 feet bgl - 13 feet bgl. The PID reading from this interval was 11.2 ppm. A high plastic, firm, damp, brown/reddish brown clay was encountered from 13 feet bgl – 14 feet bgl. A claystone/mudstone was encountered from 14 feet bgl – 20 feet bgl. The claystone/mudstone was observed to be low plasticity, very stiff/hard, light reddish brown, and dry. No petroleum odors were detected in this interval. The PID readings range from 7.6 ppm to 2.5 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet to 14 feet. On April 29, 2015 the well was gauged, developed and sampled. On May 1, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-4

On April 29, 2015 the drilling rig was set up on location SWMU 10-4. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Four soil samples were collected from the following intervals:

- 0 feet bgl – 2 feet bgl – PID reading – 40.5 ppm, duplicate collected at this interval;
- 2 feet bgl - 4 feet bgl – PID reading – 335 ppm, petroleum odor, black staining;
- 6 feet bgl - 8 feet bgl – Highest PID reading below 2 feet bgl – 4 feet bgl – 42.7 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, PID reading - 3.8 ppm.

A petroleum hydrocarbon odor was observed from 2 feet bgl – 10 feet bgl. Black staining was observed in the sample interval 2 feet bgl – 4 feet bgl.

The lithology encountered consisted of a silty clay from 0 feet bgl - 4 feet bgl with the PID readings ranging from 40.5 ppm to 335 ppm. A silty sandy clay with a faint odor was encountered from 4 feet bgl - 8 feet bgl. The clay had low plasticity and was observed to be firm to soft, damp, and reddish brown. The PID readings range from 36.8 ppm to 42.7 ppm. A stiff, highly plastic, damp, reddish brown clay was encountered from 8 feet bgl - 10 feet bgl. The clay had a faint odor with a PID reading of 37.8 ppm.

A low plastic, soft, damp, reddish brown sandy clay was encountered from 10 feet bgl – 12 feet bgl. The PID reading was 25.6 ppm. A low plastic, firm, damp to dry, silty clay was encountered from 12 feet bgl – 16 feet bgl. The PID readings range from 31.1 ppm to 32.9 ppm. The clay was reddish brown (with a trace of gray), crumbly, and dense at the base. A claystone was encountered from 16 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, light reddish brown, and dry. No odors were detected in this interval. The PID readings ranging from 14.1 ppm to 3.8 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 1, 2015 the borehole was grouted.

SWMU 10-5

On April 29, 2015 the drilling rig was set up on location SWMU 10-5. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from the following intervals:

- 0 feet bgl - 2 feet bgl – Interval exhibited petroleum odor, PID reading of 108 ppm and black staining;
- 2 feet bgl – 4 feet bgl – Interval exhibited petroleum odor, PID reading of 61 ppm;
- 4 feet bgl – 6 feet bgl – Interval exhibited petroleum odor, highest PID reading below 2 feet bgl – 4 feet bgl - 445 ppm;
- 14 feet bgl - 16 feet bgl – Interval exhibited petroleum odor, elevated PID reading of 75.2 ppm occurring between two intervals with relatively low PID readings of 3.5 ppm (12 feet bgl – 14 feet bgl) and 9.4 ppm (16 feet bgl – 18 feet bgl); and
- 22 feet bgl - 24 feet bgl – Bottom of the borehole, no odor, PID reading of 10.7 ppm.

The lithology encountered consisted of a surficial silty clay from 0 feet bgl - 2 feet bgl with the PID reading of 108 ppm. A very soft, sticky clay was encountered from 2 feet bgl - 22 feet bgl. The clay varied in color from green to brownish green to grayish green. The clay exhibited a hydrocarbon odor. The PID readings range from 445 ppm to 3.5 ppm. A claystone was encountered from 22 feet bgl – 24 feet bgl. The claystone was observed to be very stiff, light reddish brown with gray seams. No odors were detected in this interval. The PID reading was 10.7 ppm.

The sampling terminated at 24 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 12 feet to 22 feet. On May 4, 2015 the well was gauged and sampled. On May 4, 2015 the well casing and screen were removed. Phase-separated hydrocarbon (3 feet bgl to 6 feet bgl) was observed on the outside of the PVC casing when it was removed from the borehole. The borehole was grouted.

SWMU 10-6

On May 4, 2015 sample collection at SWMU 10-6 was accomplished using a hand auger. Overhead utility lines and uneven terrain prevented the mobilization of the HSA drilling rig to this location. Two soil samples were collected from 2 feet bgl - 4 feet bgl and 10 feet bgl – 12 feet bgl. A duplicate soil

sample was collected from the 10 feet bgl – 12 feet bgl interval. No petroleum odors were detected and no discoloration of the soil was observed. The PID readings range from 2.7 ppm (0 feet bgl – 2 feet bgl) to 4.7 ppm (4 feet bgl - 6 feet bgl).

The lithology encountered consisted of surficial silty clay from 0 feet bgl - 8 feet bgl. This low to moderately plastic clay was firm, damp, and reddish brown. A high plastic clay was observed from 8 feet bgl – 10 feet bgl. The clay was very stiff, damp, and reddish brown. A low plastic clay was encountered from 10 feet bgl – 12 feet bgl. The clay was stiff, dry, and light reddish brown.

The sampling was terminated at 12 feet bgl due to refusal. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice. The borehole was grouted on May 14, 2015.

SWMU 10-7

On May 1, 2015 the drilling rig was set up on location SWMU 10-7. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – PID reading – 9.5 ppm, black staining was observed at the base of this interval;
- 4 feet bgl - 6 feet bgl – Highest PID reading below 2 – 4 feet bgl – 10.6 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of borehole, PID reading – 2.7 ppm.

No petroleum hydrocarbon odor or elevated PID readings were observed.

The lithology encountered consisted of a silty clay from 0 feet bgl - 4 feet bgl with the PID readings ranging from 6.2 ppm to 9.5 ppm. A stiff to firm, high plastic clay was encountered from 4 feet bgl – 8 feet bgl. The clay was damp and reddish brown. The PID readings range from 10.6 ppm to 9.7 ppm. A claystone was encountered from 8 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, light reddish brown, and dry. No odors were observed in this interval with the PID readings ranging from 9.1 ppm to 2.7 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 1, 2015 the borehole was grouted.

SWMU 10-8

On April 30, 2015 the drilling rig was set up on location SWMU 10-8. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – Interval exhibited petroleum odor, PID reading of 1489 ppm and black staining at base;
- 4 feet bgl – 6 feet bgl – Interval exhibited petroleum odor, highest PID reading below 2 feet bgl – 4 feet bgl - 400 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 5.7 ppm.

The lithology encountered consisted of a silty clay from 0 feet bgl - 2 feet bgl with the PID reading of 12.9 ppm. Silty sandy clay was encountered from 2 feet bgl – 6 feet bgl. Hydrocarbon odor and staining was observed in this interval. There was no recovery of soil from the 6 feet bgl – 8 feet bgl interval. A claystone/mudstone was encountered from 8 feet bgl – 20 feet bgl. The claystone/mudstone was observed to be very stiff, dry, light reddish brown and gray. No odors were detected in this interval. The PID readings range from 24.6 ppm to 5.7 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 1, 2015 the borehole was grouted.

SWMU 10-9

On April 30, 2015 the drilling rig was set up on location SWMU 10-9. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – PID reading of 19.1, no odor;
- 4 feet bgl – 6 feet bgl – Interval exhibited petroleum odor, highest PID reading below 2 feet bgl – 4 feet bgl - 380 ppm; black staining was observed; a duplicate soil sample was collected from this interval; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 6.2 ppm.

The lithology encountered consisted of a silty clay from 0 feet bgl - 4 feet bgl with the PID readings of 18 ppm and 19.1 ppm. Sandy clay was encountered from 4 feet bgl – 6 feet bgl. Hydrocarbon odor and staining was observed in this interval. A claystone was encountered from 6 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, damp to dry, light reddish brown and gray. The interval from 6 feet bgl – 8 feet bgl exhibited a hydrocarbon odor. The PID readings range from 28.9 ppm to 4 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 1, 2015 the borehole was grouted.

SWMU 10-10

On April 30, 2015 the drilling rig was set up on location SWMU 10-10. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – PID reading of 18.4 ppm, no odor;
- 4 feet bgl – 6 feet bgl – Interval exhibited petroleum odor, black staining, highest PID reading below 2 feet bgl – 4 feet bgl - 1685 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 8.5 ppm.

The lithology encountered consisted of clayey sand from 0 feet bgl - 6 feet bgl with the PID readings of 11.9, 18.4, and 1685 ppm. The clayey sand exhibited a petroleum odor and black staining was observed. The clayey sand was compact to loose and dry to damp. A low plastic, soft, damp, sandy clay was encountered from 6 feet bgl – 10 feet bgl. Hydrocarbon odor and staining was observed in this interval. The PID readings were 1514 ppm (6 feet bgl – 8 feet bgl) and 686 ppm (8 feet bgl – 10 feet bgl). A silty clay was encountered from 10 feet bgl - 12 feet bgl. This clay also exhibited a

hydrocarbon odor and hydrocarbon staining. The PID reading was 655 ppm. A claystone was encountered from 12 feet bgl – 20 feet bgl. The claystone was observed to be very stiff/dense, dry, light reddish brown and gray. The interval from 12 feet bgl - 14 feet bgl exhibited a faint hydrocarbon odor. The PID readings range from 75 ppm (12 feet bgl – 14 feet bgl) to 8.5 ppm (18 feet bgl – 20 feet bgl).

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 1, 2015 the borehole was grouted.

SWMU 10-11

On May 12, 2015 the drilling rig was set up on location SWMU 10-11. Sample collection was accomplished using the HSA drilling method and split spoon samplers. A sample was not collected from the 2 feet bgl – 4 feet bgl interval due to poor recovery during the sampling process. Three soil samples were collected from the following intervals:

- 4 feet bgl - 6 feet bgl – Interval exhibited petroleum odor, black staining, PID reading of 524 ppm;
- 8 feet bgl – 10 feet bgl – Interval exhibited petroleum odor, black sludge/staining, PID reading of 570 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 13.4 ppm.

The lithology encountered consisted of silty clay from 0 feet bgl - 4 feet bgl with the PID readings of 13.1 ppm and 4.0 ppm. This low plastic clay was firm, damp, brown, and did not exhibit an odor or staining.

Clayey sand was encountered from 4 feet bgl - 12 feet bgl. The sand was fine grain, compact, and moist to saturated. The sand was stained and exhibited a hydrocarbon odor. The PID readings range from 570 ppm to 8.5 ppm. In the 12 feet bgl – 14 feet bgl interval the clayey sand transitioned to a sandy clay that was damp to very moist and exhibited a petroleum odor. The PID reading was 69.2 ppm. Sandy clay extended to a depth of 17 feet bgl. A noticeable hydrocarbon odor extended to 16 feet bgl. The PID reading decreased from 20.6 ppm (14 feet bgl – 16 feet bgl) to 7.2 ppm (16 feet bgl - 18 feet bgl).

A claystone was encountered from 17 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, damp to dry, and reddish purple. This bottom interval did not exhibit an odor. The PID reading from 18 feet bgl – 20 feet bgl was 13.4 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 3 feet to 13 feet. On May 14, 2015 the well was gauged, developed and sampled. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-12

On May 12, 2015 the drilling rig was set up on location SWMU 10-12. Sample collection was accomplished using the HSA drilling method and split spoon samplers. A sample was not collected from the 2 feet bgl – 4 feet bgl interval due to poor recovery during the sampling process. Two soil samples were collected from the following intervals:

- 6 feet bgl - 8 feet bgl – Interval exhibited black staining and asphalt type rock, PID reading of 4.5 ppm; and
- 20 feet bgl – 22 feet bgl – Bottom of the borehole, no odor, PID reading of 1.5 ppm.

The lithology encountered consisted of a silty clay from 0 feet bgl – 11 feet bgl with the PID readings ranging from 3.0 ppm to 6.9 ppm. This low plastic clay was firm, damp, and brown. Black staining and asphalt type rock was observed in the 6 feet bgl – 8 feet bgl interval. A clayey sand was encountered from 11 feet bgl – 12 feet bgl. The sand was fine grained, compact, saturated, and brown. No odors were detected in this interval. The PID reading was 6.1 ppm.

A fine grained, loose, saturated, brown silty sand was encountered from 12 feet bgl – 16 feet bgl. The PID readings were 4.9 ppm (12 feet bgl – 14 feet bgl) and 2.9 ppm (14 feet bgl – 16 feet bgl). A low plastic, firm, damp, brown, sandy clay was encountered from 16 feet bgl - 18 feet bgl. The PID reading was 1.8 ppm and no odors were detected. A gravelly clay was encountered from 18 feet bgl – 20 feet bgl. No odors were exhibited from this interval. The PID reading was 1.2 ppm.

A claystone was encountered from 20 feet bgl to 22 feet bgl. The claystone was observed to be very stiff, damp to dry, reddish purple, gray and dark reddish brown. This bottom interval did not exhibit an odor. The PID reading from 20 feet bgl - 22 feet bgl was 1.5 ppm.

The sampling terminated at 22 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet to 14 feet. On May 14, 2015 the well was gauged, developed and sampled. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-13

On May 13, 2015 the drilling rig was set up on location SWMU 10-13. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl- 4 feet bgl – PID reading of 5.6, no odor;
- 6 feet bgl - 8 feet bgl – Interval exhibited odor and black staining, highest PID reading below 2 feet bgl – 4 feet bgl - 1055 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 14.1 ppm.

The lithology encountered consisted of a silty clay from 0 - 6 feet bgl with the PID readings ranging from 4.4 ppm (0 feet bgl – 2 feet bgl) to 775 ppm (4 feet bgl – 6 feet bgl). This silty clay was observed to be low plastic, very stiff to firm, damp to dry, and calcareous. A high plastic clay was encountered from 6 feet bgl – 8 feet bgl. The clay was observed to be firm, damp, dark brown with black hydrocarbon staining. Petroleum odors were exhibited from the interval. This interval also had a PID reading of 1055 ppm. A gravelly clay similar to the clay encountered from 6 feet bgl – 8 feet bgl was encountered from 8 feet bgl – 9 feet bgl. This clay had a petroleum odor and PID reading of 721 ppm.

A claystone was encountered from 9 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, dry, and reddish purple. The interval from 9 feet bgl - 10 feet bgl exhibited a faint hydrocarbon odor. The PID readings range from 11 to 14.1 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 14, 2015 the borehole was grouted.

SWMU 10-14

On May 12, 2015 the drilling rig was set up on location SWMU 10-14. Sample collection was accomplished using the HSA drilling method and split spoon samplers. A sample was not collected from the 2 feet bgl – 4 feet bgl interval due to no soil recovery during the sampling process. Two soil samples were collected from the following intervals:

- 6 feet bgl - 8 feet bgl – Interval exhibited petroleum odor and was dark brown, highest PID reading below 2 feet bgl – 4 feet bgl - 900 ppm; and
- 21 feet bgl - 23 feet bgl – Bottom of the borehole, no odor, PID reading of 1.8 ppm.

The lithology encountered consisted of a silty clay from 0 feet bgl - 2 feet bgl with a PID reading of 3.2 ppm. This silty clay was observed to be low plastic, firm, dry to damp, and calcareous. No odor was exhibited from this interval. There was no recovery from the 2 feet bgl – 4 feet bgl interval. A loose, light tan, saturated clayey gravel was encountered from 4 feet bgl – 6 feet bgl. The PID reading was 10.1 ppm. A faint petroleum odor was detected. A high plastic clay was encountered from 6 feet bgl – 6.75 feet bgl. The clay was observed to be stiff, damp, dark brown with a petroleum odor. This interval had a PID reading of 900 ppm.

A saturated clayey sand was encountered from 6.75 feet bgl – 8 feet bgl. The sand was fine grain, compact, and dark brown. The sand had a petroleum odor. A sandy clay was encountered below the clayey sand and was found to have low plasticity, very soft, damp to moist, and brown. This interval had a petroleum odor. The PID reading was 23.7 ppm.

A clayey gravelly sand was encountered from 10 feet bgl – 16 feet bgl. The sand was fine to coarse, brown, and saturated. No odor was detected and the PID readings range from 15.9 feet bgl to 22.4 feet bgl. A low plastic gravelly clay was below the clayey gravelly sand. The clay was very stiff, damp, reddish brown and gray. No odors were detected. The PID readings were 7.9 ppm (16 feet bgl – 18 feet bgl) and 5.2 ppm (18 feet bgl – 19 feet bgl).

A claystone was encountered from 19 feet bgl – 23 feet bgl. The claystone was observed to be very stiff, dry, reddish brown and gray. No odors were detected. The PID readings range from 6.1 ppm to 1.8 ppm.

The sampling terminated at 23 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was installed with the screened interval ranging from 2 feet to 12 feet. On May 14, 2015 the well was gauged, developed and sampled. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-15

On May 13, 2015 the drilling rig was set up on location SWMU 10-15. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl - 4 feet bgl – PID reading of 11.1 ppm, faint petroleum odor, black staining at 3.5 feet bgl;
- 4 feet bgl - 6 feet bgl – Interval exhibited faint petroleum odor and black staining, highest PID reading below 2 feet bgl – 4 feet bgl – 13.9 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 7.1 ppm.

The lithology encountered consisted of the following alternating clays and sands:

- Silty clay 0 feet bgl – 0.5 feet bgl (low plastic, firm, and dry to damp);
- Clay 0.5 feet bgl – 2 feet bgl (high plastic, soft, damp);
- Sandy Clay 2 feet bgl – 4.5 feet bgl (low to moderate plasticity, soft, damp with black staining at 3.5 feet bgl, faint petroleum odor);
- Clay 4.5 feet bgl – 5.5 feet bgl (high plastic, soft, damp, faint petroleum odor);
- Sandy Clay 5.5 feet bgl – 8 feet bgl (low plasticity, soft, damp with saturated sand seam at 7 feet bgl);
- Clayey Sand 8 feet bgl – 9.5 feet bgl (loose, fine grained to small gravel, saturated);
- Clay 9.5 feet bgl – 10 feet bgl (high plastic, stiff, damp);
- Silty Clay 10 feet bgl – 11.5 feet bgl (moderate plasticity, firm, damp);
- Sandy Clay 11.5 feet bgl – 12.5 feet bgl (fine grained, moist to saturated);

- Silty Clay 12.5 feet bgl – 13 feet bgl (low plastic, firm, and damp);
- Clayey Sand 13 feet bgl – 14 feet bgl (fine grained, loose, saturated);
- Sandy Clay 14 feet bgl – 16 feet bgl (low plastic, firm, and damp);
- Clay 16 feet bgl – 17.5 feet bgl (low plastic, stiff, and damp)
- Claystone 17.5 feet bgl – 20 feet bgl (very stiff, dry)

The PID readings range from 7.1 ppm (18 feet bgl – 20 feet bgl) to 13.9 ppm (4 feet bgl – 6 feet bgl). Saturation was encountered at the following depths:

- 7 feet bgl – Sand seam approximately 3 inches thick;
- 8 feet bgl - 9.5 feet bgl – Clayey sand;
- 11.5 feet bgl - 12.50 feet bgl – Sandy clay; and
- 13 feet bgl – 14 feet bgl – Clayey sand.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was installed with the screened interval ranging from 6 feet to 16 feet. On May 14, 2015 the well was gauged, developed and sampled. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-16

On May 13, 2015 sample collection at SWMU 10-16 was accomplished using the hand auger. Overhead utility lines prevented the mobilization of the HSA drilling rig to this location. Three soil samples were collected from the following depths:

- 2 feet bgl - 4 feet bgl – PID reading of 4.9 ppm;
- 4 feet bgl – 5.5 feet bgl – PID reading of 4.4 ppm, immediately above saturation; and
- 8 feet bgl – 9 feet bgl – PID reading of 6.8 ppm, bottom-most sample.

The lithology encountered consisted of silty clay from 0 feet bgl - 5 feet bgl. This low plastic clay was firm, damp, and brown. A low plastic sandy clay was observed from 5 feet bgl – 5.5 feet bgl. The clay was firm to soft, damp to moist, and brown. A saturated clayey sand was encountered from 5.5 feet bgl to 8 feet bgl. The sand was fine grained, loose, and brown. The sampling was terminated at

9 feet in a high plastic, stiff, damp, brown clay. No odors, elevated PID readings or soil staining were observed in the soils from this boring.

Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice. A temporary well was installed with the screened interval ranging from 0 feet to 8.5 feet. On May 14, 2015 the well was gauged and sampled. The well was not purged due to the small fluid column in the well (2.78 feet). On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-17

On May 13, 2015 sample collection at SWMU 10-17 was accomplished using the hand auger. The lithology encountered consisted of silty clay from 0 feet bgl - 4 feet bgl. This low plastic, stiff clay was damp and brown. A clayey sand was encountered from 4 to 8 feet bgl. The sand was fine grained, compact, and damp to moist. The sand exhibited a petroleum odor and a PID reading of 1667 ppm. A soil sample and a duplicate soil sample were collected from the 6 feet bgl – 8 feet bgl interval. The sampling was terminated at 8 feet bgl. The soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice. A temporary well was not installed at this location. On May 14, 2015 the borehole was grouted.

SWMU 10-18

On May 16, 2016 the drilling rig was set up on location SWMU 10-18. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 6.2 ppm, no odor;
- 8 feet bgl - 10 feet bgl – Interval immediately above the claystone, no odor and PID reading of 20.6 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, no odor, PID reading of 8.7 ppm.

The lithology encountered consisted of a silty clay from 0 - 10 feet bgl with the PID readings ranging from 6.2 ppm (2 feet bgl – 4 feet bgl) to 20.6 ppm (8 feet bgl – 10 feet bgl). This silty clay was observed to be low plastic, firm, dry to damp, and brown.

A claystone was encountered from 10 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, dry, and reddish purple. The PID readings range from 14.1 ppm to 8.7 ppm.

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 16, 2016 the borehole was grouted.

SWMU 10-19

On May 17, 2016 the drilling rig was set up on location SWMU 10-19. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 1.5 ppm, no odor;
- 12 feet bgl - 14 feet bgl – Top of claystone, chemical odor and PID reading of 900 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of the borehole, odor, PID reading of 30.1 ppm.

The lithology encountered consisted of a silty clay from 0 - 6 feet bgl with the PID readings ranging from 1.5 ppm (2 feet bgl – 2.5 feet bgl) to 3.5 ppm (0 – 2 feet bgl). This silty clay was observed to be low plastic, firm, dry to damp, and brown. A high plasticity clay was encountered from 6 feet bgl to 10 feet bgl. The clay was firm, damp, brown and did not exhibit an odor. The PID readings were 8.2 ppm (6 feet bgl to 8 feet bgl) and 12.6 ppm (8 feet bgl to 10 feet bgl). A low plasticity clay was encountered from 10 feet bgl to 12 feet bgl. The clay was firm, damp, reddish brown and did not exhibit an odor. At the base of this interval the clay was found to be moist, dense and gray.

A claystone was encountered from 12 feet bgl – 20 feet bgl. The claystone was observed to be very stiff, dry, and reddish brown and gray. The claystone exhibited a chemical odor. The PID readings range from 900 ppm (12 feet bgl to 14 feet bgl) to 30.1 ppm (18 feet bgl to 20 feet bgl).

The sampling terminated at 20 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On May 17, 2016 the borehole was grouted.

SWMU 10-20

On May 17, 2016 the drilling rig was set up on location SWMU 10-20. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 0.7 ppm;
- 8 feet bgl - 10 feet bgl – Interval exhibited chemical odor and black staining, PID reading was 1603 ppm;
- 10 feet bgl – 12 feet bgl – Interval immediately above saturation, exhibited a chemical odor, PID reading was 1715 ppm;
- 16 feet bgl – 18 feet bgl – Interval exhibited chemical odor and black staining, PID reading was 1022 ppm; and
- 20 feet bgl - 22 feet bgl – Bottom of the borehole, no odor, PID reading of 10.2 ppm.

The lithology encountered consisted of the following alternating clays:

- Silty Clay: 0 – 8 feet bgl (low plastic, firm, damp, brown, odor from 6 feet bgl to 8 feet bgl);
- Clay: 8 feet bgl – 10 feet bgl (high plasticity, firm, damp, brown, chemical odor and black staining at base);
- Silty Sandy Clay: 10 feet bgl – 18 feet bgl (moderate plasticity, firm, damp to moist to saturated with black staining at 16 feet bgl to 18 feet bgl, chemical odor);
- Silty Clay: 18 feet bgl – 20 feet bgl (low, soft, damp to moist, brown, chemical odor); and
- Claystone: 20 feet bgl – 22 feet bgl (very stiff, dry, reddish purple and gray, no odor).

The PID readings ranged from 0.7 ppm (2 feet bgl – 4 feet bgl) to 1715 ppm (10 feet bgl – 12 feet bgl). Saturation was encountered in silty sandy clay at the following depths:

- 12 feet bgl to 14 feet bgl – Moist to saturated;
- 14 feet bgl to 16 feet bgl – Moist to saturated in sand seam at 15.5 feet bgl; and
- 16 feet bgl - 18 feet bgl – Moist to saturated.

The sampling terminated at 22 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was installed with the screened interval ranging from 5 feet to 20 feet. On May 19, 2016 the well was gauged and developed. The well bailed dry after approximately 7 gallons of groundwater were removed from the well. The groundwater was sampled on May 20, 2016. On May 23, 2016 the well casing and screen were removed and the borehole was grouted.

SWMU 10-21

On May 18, 2016 the drilling rig was set up on location SWMU 10-21. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 17 ppm, no odor;
- 12 feet bgl - 14 feet bgl – Interval immediately above saturation, PID reading of 12.1 ppm; and
- 20 feet bgl - 22 feet bgl – Bottom of the borehole, no odor, PID reading of 2.7 ppm.

The lithology encountered consisted of the following predominantly clays:

- Silt/gravel: 0 – 2 feet bgl (compact, damp, no odor);
- Silty Clay: 2 feet bgl – 6 feet bgl (low plasticity, firm, damp, brown, no odor);
- Sandy Silty Clay: 6 feet bgl – 10 feet bgl (low plasticity, soft, damp, brown, no odor);
- Clay: 10 feet bgl – 14 feet bgl (high plasticity, soft, damp brown, no odor);
- Sandy Silty Clay: 14 feet bgl – 20 feet bgl (low, soft, moist to saturated in sand seams, no odor); and
- Claystone: 20 feet bgl – 22 feet bgl (very stiff, dry, reddish purple and gray, no odor).

The sampling terminated at 22 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was installed with the screened interval ranging from 10 feet to 20 feet. On May 19, 2016 the well was gauged. The depth to groundwater was 19.80 feet below top of casing (btoc) and the total depth was 20.23 feet btoc. The well was not developed due to the small volume of groundwater in the well. The groundwater was sampled on May 20, 2016. On May 23, 2016 the well casing and screen were removed and the borehole was grouted.

SWMU 10-22

On May 18, 2016 sample collection at SWMU 10-22 was accomplished using the hand auger. The lithology encountered consisted of clay from 0 to 7 feet bgl. This moderately plastic, firm clay was damp and brown and did not exhibit an odor.

Claystone was encountered from 7 feet bgl to 9 feet bgl. A soil sample and a duplicate soil sample were collected from the 2 feet bgl – 2.5 feet bgl interval. A soil sample was collected from the bottom of the borehole (8 feet bgl – 9 feet bgl). The sampling was terminated at 9 feet bgl. The soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not installed at this location. On May 18, 2016 the borehole was grouted.

SWMU 10-23

On September 19, 2016 the drilling rig was set up on location SWMU 10-23. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Two soil samples were collected for chemical analyses from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 0.2 ppm, no odor; and
- 15 feet bgl - 16 feet bgl – Top of claystone, dry, no odor and PID reading of 1.4 ppm.

The lithology encountered consisted of a silt from 0 - 6 feet bgl with the PID readings ranging from 0.0 ppm (0 feet bgl – 2.0 feet bgl) to 0.2 ppm (2 – 6 feet bgl). This silt was observed to be low plastic, soft, damp, and brown with no odor. A low plasticity silty clay was encountered from 6 feet bgl to 15 feet bgl. The clay was firm, damp, and brown with a trace of sand and did not exhibit an odor. The PID readings ranged from 2.0 ppm to 3.7 ppm.

A claystone was encountered from 15 feet bgl – 17 feet bgl. The claystone was observed to be very stiff, dry, and pink. The claystone did not exhibit an odor. The PID reading was 1.4 ppm.

The sampling terminated at 17 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On September 19 the borehole was grouted.

SWMU 10-24

On September 19, 2016 the drilling rig was set up on location SWMU 10-24. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Four soil samples were collected for chemical analyses from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 2.5 ppm, no odor;
- 6 feet bgl – 8 feet bgl – PID reading of 3,000 ppm, hydrocarbon odor;
- 8 feet bgl – 10 feet bgl – PID reading of 2,021 ppm, hydrocarbon odor; and
- 15 feet bgl - 16 feet bgl – Top of claystone, dry, faint hydrocarbon odor, and PID reading of 56 ppm.

The lithology encountered consisted of a silt from 0 - 6 feet bgl with the PID readings ranging from 1.1 ppm (4 feet bgl – 6 feet bgl) to 2.5 ppm (2 – 4 feet bgl). This silt was observed to be low plastic, soft, damp, and brown with no odor. A low plasticity silty clay was encountered from 6 feet bgl to 15 feet bgl. The clay was soft to firm, damp, dark brown with a trace of sand and exhibited a hydrocarbon odor throughout. Phase-separated hydrocarbon was observed in the interval from 8 feet bgl to 10 feet bgl along with a slight increase in moisture and sand content near the base of the two-foot interval. The PID readings ranged from 123 ppm in the 14 feet bgl to 15 feet bgl interval just above the top of the bedrock to 3,000 ppm at the top of the silty clay at a depth of 6 feet bgl to 8 feet bgl.

A claystone was encountered from 15 feet bgl – 17 feet bgl. The claystone was observed to be very stiff, slightly sandy, dry, and pink. The claystone had a faint hydrocarbon odor. The PID readings ranged from 56 ppm to 80 ppm.

The sampling terminated at 17 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was not set at this location since saturation was not encountered during the soil sampling. On September 19, 2016 the borehole was grouted.

SWMU 10-25

On September 19, 2016 the drilling rig was set up on location SWMU 10-25. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected for chemical analyses from the following intervals:

- 2 feet bgl – 2.5 feet bgl – PID reading of 1,319 ppm, hydrocarbon odor;
- 10 feet bgl – 12 feet bgl – PID reading of 367 ppm, hydrocarbon odor; and
- 16.5 feet bgl - 18 feet bgl – Top of claystone, dry, no odor, and PID reading of 5 ppm.

The lithology encountered consisted of a silt from 0 - 2 feet bgl with a PID reading of 1.9 ppm. This silt was observed to be low plastic, soft, damp, and brown with no odor. A low plasticity silty clay was encountered from 2 feet bgl to 9 feet bgl. The clay was soft, damp, dark brown and exhibited a hydrocarbon odor throughout. The PID readings ranged from a low of 108 ppm in the 6 feet bgl to 8 feet bgl interval to a high of 1,319 ppm at the top of the silty clay at a depth of 2 feet bgl to 4 feet bgl. From 9 feet bgl to the top of the claystone bedrock at 16.5 feet bgl, the clay alternated from sand clay (9 feet bgl – 11 feet bgl, 12 feet bgl - 13 feet bgl, and 14 feet bgl - 16.5 feet bgl) to silty clay (11 feet bgl – 12 feet bgl and 13 feet – 14 feet bgl). Both the sandy clay and silty clay intervals were low plasticity, brown, and had a hydrocarbon odor. While the silty clay was firm, the sandy clay intervals were soft. The sandy clay interval from 12 feet bgl to 13 feet bgl was saturated, while other intervals were damp. The PID readings increased with depth from 201 ppm in the 8 feet bgl to 10 feet bgl interval to a maximum of 338 ppm in the 12 feet bgl to 13 feet bgl interval. The PID reading then decreased with depth to 10.6 ppm in the 14 feet bgl to 16 feet bgl interval.

A claystone was encountered from 16.5 feet bgl – 19 feet bgl. The claystone was observed to be very stiff, dry, brown and gray. The claystone did not have an odor. The PID readings were 5 ppm.

The sampling terminated at 19 feet bgl. Soil samples were collected in the appropriate sample containers, sealed in sealable bags, and immediately placed in an ice chest containing ice.

A temporary well was set at this location since saturation was encountered during the soil sampling with the screen placed from 8 feet bgl to 18 feet bgl. On September 19, 2016 the temporary well was gauged. No phase-separated hydrocarbon was detected in the well. The depth to water was 18.95 feet btoc. The groundwater level was approximately 16.95 feet bgl. The depth to the bottom of the well was 20.50 feet bgl.

On September 21, 2016 the well was gauged with the water level measured at 10.74 feet btoc (8.74 feet bgl). Water samples were collected and immediately after the groundwater sample collection the well casing and screen were removed and the borehole was grouted.

4.4 Temporary Monitor Well Construction and Groundwater Sampling

This subsection provides a description of groundwater investigations to locate potential impacts to the groundwater in the area of the Sludge Pits. This includes the installation of temporary monitor wells, measurement of fluid levels, well development/purging, collection of groundwater field data, and the collection of groundwater samples.

A description of the well installations and groundwater sampling procedures are presented in Appendix B – Field Methods. Copies of the boring logs that include the well settings are provided in Appendix C. Field measurements of groundwater stabilization parameters included pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature. These measurements are presented in Table 4. The locations of the soil borings with temporary well completions appear on Figure 7.

4.4.1 Groundwater Investigation

Groundwater samples were collected from eleven temporary well completions. The following list provides a brief summary of the well development and groundwater sample collection activities:

- SWMU 10-1; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-3; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-5; sampled only due to slow recharge rate; yielded enough water for a full analytical suite;
- SWMU 10-11; developed and sampled; yielded enough water for a full analytical suite; sheen observed on purge water;
- SWMU 10-12; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-14; developed and sampled; yielded enough water for a full analytical suite; sheen observed on purge water;
- SWMU 10-15; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-16; sampled only due to a small water column in the temporary well completion; yielded enough water for VOCs, SVOCs, and gasoline, diesel, and motor oil range petroleum hydrocarbons analyses;
- SWMU 10-20; developed and sampled; yielded enough water for the full analytical suite;
- SWMU 10-21; developed and sampled; yielded enough water for VOCs, SVOCs, and gasoline, range petroleum hydrocarbons analyses; and

- SWMU 10-25; sampled only due to a small water column in the temporary well completion; yielded enough water for the full analytical suite.

The drilling equipment and hand auger equipment was decontaminated between each borehole, as described in Appendix B. The well development and purging is also discussed in Appendix B. The installation of the temporary wells and collection of groundwater samples are discussed below in numerical order for the samples collected near the former Sludge Pits.

SWMU 10-1

On April 28, 2015 the drilling rig was set up on location SWMU 10-1. The boring was installed using the HSA drilling method. Groundwater was encountered at approximately 6 feet bgl in a sandy clay. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet bgl to 14 feet bgl to include the sandy clay interval at a depth of 6 feet bgl to 8 feet bgl that indicated the presence of saturation. The screen extends downward to the top of the bedrock to also potentially encounter any groundwater on top of the bedrock surface. A sand filter pack was installed to approximately 2 feet bgl. A bentonite seal was installed to approximately 1 foot bgl. The top of casing was approximately 3.25 feet above ground level.

On April 29, 2015 the well was gauged. The depth to water was 10.63 feet below the top of casing (btoc). The groundwater level was approximately 7.38 feet bgl. Approximately 5 gallons of groundwater were developed/purged from the well by 9:20 am on April 29, 2015. The purge water was brown and turbid. The well was sampled on April 29, 2015 at 5:10 pm. There was a sufficient volume of groundwater to collect samples for a full analytical suite as specified in the Investigation Work Plan and discussed further in Section 6.2. All purge/development water was disposed at the bundle cleaning pad on April 29, 2015. On May 1, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-3

On April 28, 2015 the drilling rig was set up on location SWMU 10-3. The boring was installed using the HSA drilling method. Groundwater was encountered in sand seams that were identified in a sandy clay interval, which extended from 8 feet bgl to 12 feet bgl. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet bgl to 14 feet bgl to cover the length of the silty clay from 8 feet bgl to 12 feet

bgl, which was very moist and indicated the greatest potential to yield groundwater. The screen also extended to the top of bedrock to encounter any groundwater accumulating on this surface. A filter pack was installed to approximately 2 feet bgl. A bentonite seal was installed to approximately 1 foot bgl. The top of casing was approximately 3.13 feet above ground level.

On April 29, 2015 the well was gauged. The depth to water was 14.18 feet btoc. The groundwater level was approximately 11.05 feet bgl. Approximately two gallons of groundwater were developed/purged from the well on April 29, 2015. The purge water was brown, cloudy and did not exhibit an odor. There was enough groundwater to collect samples for a full analytical suite on April 29, 2015. All purge/development water was disposed at the bundle cleaning pad. On May 1, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-5

On April 29, 2015 the drilling rig was set up on location SWMU 10-5. The boring was installed using the HSA drilling method. Groundwater saturation was not readily apparent during the collection of soil samples, which consisted clay from the land surface to the top of bedrock at 22 feet bgl. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 12 feet bgl to 22 feet bgl to include the top of bedrock. A filter pack was installed to approximately 10 feet bgl. A bentonite seal was installed to approximately 9 feet bgl. The top of casing was approximately 3.00 feet above ground level. The well was gauged immediately after the installation of the well materials. No groundwater was detected in the well. The total depth of the well was 24.48 feet btoc (21.48 feet bgl).

On May 1, 2015 the well was gauged and the depth to groundwater was 19.48 feet btoc. The groundwater level was approximately 16.48 feet bgl. The fluid column in the well was 5 feet in thickness. On May 4, 2015 the well was gauged. The depth to water was 14.91 feet btoc. The groundwater level was approximately 11.91 feet bgl. The fluid column in the well was 9.57 feet.

Due to the very slow groundwater recharge rate in this well, the well was not developed/purged. There was enough groundwater to collect samples on May 4, 2015 for a full analytical suite. The water was slightly turbid and did not exhibit an odor.

On May 4, 2015 the well casing and screen were removed from the borehole. Separate phase hydrocarbon (SPH) was observed on the outside of the well casing at approximately three to six feet below ground level. This is above the level to which groundwater recovered and there was no

indication of SPH in the soil samples, thus the source of the SPH is not readily apparent. The borehole was grouted.

SWMU 10-11

On May 12, 2015 the drilling rig was set up on location SWMU 10-11. The boring was installed using the HSA drilling method. Groundwater saturation was encountered at four feet bgl in a clayey sand that was black and exhibited a petroleum odor.

A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 3 feet bgl to 13 feet bgl to include all of the saturated clayey sand interval that extended from 4 feet to 12 feet, where it transitioned to a damp sandy clay. A filter pack was installed to approximately 1 feet bgl. A bentonite seal was installed to ground level. The top of casing was approximately 3.08 feet above ground level.

On May 14, 2015 the well was gauged. The depth to water was 6.43 feet btoc. The groundwater level was approximately 3.35 feet bgl. The depth to the bottom of the well was 16.65 feet btoc. Approximately 5.25 gallons of groundwater were developed/purged from the well on May 14, 2015 prior to collection of the groundwater samples.

The purge water was turbid and a sheen was observed on the purge water. The water did not exhibit an odor. There was enough groundwater to collect samples for a full analytical suite. All purge water was disposed at the bundle cleaning pad on May 14, 2015. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-12

On May 12, 2015 the drilling rig was set up on location SWMU 10-12. The boring was installed using the HSA drilling method. Groundwater saturation was first encountered at 4 feet bgl in a very moist silty clay. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet to 14 feet. The screen placement included the uppermost interval indicating the potential to produce water in the silty clay that extended from 4 feet bgl to 11 feet bgl and the underlying clayey/silty sand that was saturated. A filter pack was installed to approximately 2 feet bgl. A bentonite seal was installed to ground level. The top of casing was approximately 2.92 feet above ground level.

On May 14, 2015 the well was gauged. The depth to water was 6.30 feet btoc. The groundwater level was approximately 3.38 feet bgl. The depth to the bottom of the well was 17.48 feet btoc. Approximately 5.75 gallons of groundwater were developed/purged from the well by on May 14, 2015 prior to sample collection.

The purge water was turbid and did not exhibit an odor. There was enough groundwater to collect samples for a full analytical suite. All purge water was disposed at the bundle cleaning pad on May 14, 2015. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-14

On May 12, 2015 the drilling rig was set up on location SWMU 10-14. The boring was installed using the HSA drilling method. Groundwater saturation was encountered at two feet bgl. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 2 feet to 12 feet. The top of the well screened corresponded with the anticipated depth of groundwater and extended deeper to include the upper 10 feet of saturated soils. The screened soils included loose, light tan, saturated clayey gravel from 4 feet bgl to 6 feet bgl, a high plastic clay from 6 feet bgl to 6.75 feet bgl, saturated clayey sand from 6.75 feet bgl to 8 feet bgl, sandy clay from 8 feet bgl to 10 feet bgl, and clayey gravelly sand was encountered from 10 feet bgl to 16 feet bgl.

A filter pack was installed to approximately 1 feet bgl. A bentonite seal was installed to ground level. The top of casing was approximately 2.00 feet above ground level.

On May 14, 2015 the well was gauged. The depth to water was 6.00 feet btoc. The groundwater level was approximately 4.00 feet bgl. The depth to the bottom of the well was 14.50 feet btoc. Approximately 5 gallons of groundwater were purged from the well by on May 14, 2015 before collecting the groundwater samples.

The purge water was turbid, reddish brown and a sheen was observed on the purge water. The water did not exhibit an odor. There was enough groundwater to collect samples for a full analytical suite. All purge water was disposed at the bundle cleaning pad on May 14, 2015. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-15

On May 13, 2015 the drilling rig was set up on location SWMU 10-15. The boring was installed using the HSA drilling method. Groundwater saturation was first encountered at 7 feet bgl in a sand seam within a sandy clay. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 6 feet to 16 feet. The screened interval included the uppermost indication of saturation and included the 10-foot interval below. The screened soils included sandy clay from 6 to 8 feet bgl with saturated sand seams at 7 feet, saturated clayey sand from 8 feet bgl to 9.5 feet bgl, clay from 9.5 feet bgl to 10 feet bgl, silty clay from 10 feet bgl to 11.5 feet bgl, very moist to saturated sandy clay from 11.5 feet bgl to 12.5 feet bgl, silty clay from 12.5 feet bgl to 13 feet bgl, saturated clayey sand from 13 feet bgl to 14 feet bgl, and sandy clay from 14 feet bgl to 16 feet bgl.

A filter pack was installed to approximately 4 feet bgl. A bentonite seal was installed to ground level. The top of casing was approximately 3.33 feet above ground level.

On May 14, 2015 the well was gauged. The depth to water was 7.64 feet btoc. The groundwater level was approximately 4.31 feet bgl. The depth to the bottom of the well was 20.10 feet btoc. Approximately 6.5 gallons of groundwater were purged from the well by on May 14, 2015 and groundwater samples were collected.

The purge water was turbid and did not exhibit a petroleum odor. There was enough groundwater to collect samples for a full analytical suite. A duplicate groundwater sample was also collected from this location. All purge water was disposed at the bundle cleaning pad on May 14, 2015. On May 14, 2015 the well casing and screen were removed and the borehole was grouted.

SWMU 10-16

On May 13, 2015 sample collection at SWMU 10-16 was accomplished using the hand auger. Overhead utility lines prevented the mobilization of the HSA drilling rig to this location. Groundwater saturation was encountered at 5.5 feet bgl in a clayey sand. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. Due to the shallow depth of the boring, it was possible to install the screen from ground level to bottom of the boring at 9 feet bgl. The soils indicating saturation consisted of clayey sand and extended from 5.5 feet bgl to 8 feet bgl. A filter pack and bentonite seal were not installed. The top of screen extended to approximately 1.5 feet above ground level.

On May 14, 2015 the well was gauged. The depth to water was 7.70 feet btoc. The groundwater level was approximately 6.20 feet bgl. The depth to the bottom of the well was 10.48 feet btoc. Due to the small fluid column (2.78 feet - 0.47 gallons) in this well, the well was not developed/purged. There was enough groundwater to collect samples for only VOCs, TPH, and SVOC analyses. The water was turbid and did not exhibit an odor.

SWMU 10-20

On May 17, 2016 the drilling rig was set up on location SWMU 10-20. The boring was installed using the HSA drilling method. Groundwater saturation was first encountered at 12 feet bgl in a silty sandy clay. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 5 feet to 20 feet. The screened interval included the uppermost indication of saturation and included the 10-foot interval below. The screened soils included the following:

- Silty Sandy Clay - 12 feet bgl to 14 feet bgl – moist to saturated;
- Silty Sandy Clay – 14 feet bgl to 16 feet bgl – moist to saturated in sand seam at 15.5 feet bgl; and
- Silty Sandy Clay - 16 feet bgl - 18 feet bgl – moist to saturated.

A filter pack was installed to approximately 3 feet bgl. A bentonite seal was installed to 2 feet bgl. The top of casing was approximately 1.71 feet above ground level.

On May 19, 2016 the well was gauged. The depth to water was 12.60 feet btoc. The groundwater level was approximately 10.89 feet bgl. The depth to the bottom of the well was 19.29 feet bgl. The well was bailed dry after removing approximately 7 gallons of groundwater during development. Groundwater samples were collected on May 20, 2016.

The purge water was clear and exhibited a faint hydrocarbon odor. There was enough groundwater to collect samples for a full analytical suite. All purge water was disposed at the bundle cleaning pad on May 19, 2016. On May 23, 2016 the well casing and screen were removed and the borehole was grouted.

SWMU 10-21

On May 18, 2016 the drilling rig was set up on location SWMU 10-21. The boring was installed using the HSA drilling method. Groundwater saturation was encountered from 14 feet to 18 feet within

sand seams in a sandy silty clay. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 10 feet bgl to 20 feet bgl. A filter pack was installed to approximately 8 feet bgl. A bentonite seal was installed to approximately 6 feet bgl. The top of casing was approximately 0.46 feet above ground level.

On May 19, 2016 the well was gauged and the depth to groundwater was 19.80 feet btoc/19.34 feet bgl. The fluid column in the well was 0.43 feet in thickness. Due to the very slow groundwater recharge rate in this well, the well was not developed/purged. The depth to groundwater was gauged on May 19, 2016 and determined to be 19.60 feet btoc/19.14 feet bgl. There was enough groundwater to collect samples on May 19, 2016 for volatile organics, semivolatile organics and gasoline range petroleum hydrocarbons analyses.

The water was clear to turbid and did not exhibit an odor. On May 23, 2016 the well casing and screen were removed and the borehole was grouted.

SWMU 10-25

On September 19, 2016 the drilling rig was set up on location SWMU 10-25. The boring was installed using the HSA drilling method. Groundwater saturation was first encountered at 12 feet bgl in a sandy clay. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 8 feet to 18 feet. The screened interval included the uppermost indication of saturation and extended to the top of bedrock. The screened soils included the following:

- Silty Clay - 8 feet bgl to 9 feet bgl – damp;
- Sandy Clay - 9 feet bgl to 11 feet bgl – damp, brown to black discoloration;
- Silty Clay - 11 feet bgl to 12 feet bgl – damp;
- Sandy Clay - 12 feet bgl to 13 feet bgl – saturated;
- Silty Clay – 13 feet bgl to 14 feet bgl – damp;
- Sandy Clay - 14 feet bgl to 16.5 feet bgl – damp to moist; and
- Claystone – 16.5 feet bgl to 18 feet bgl - dry.

A filter pack was installed to approximately 6 feet bgl. A bentonite seal was installed to the land surface. The top of casing was approximately 2.0 feet above ground level.

On September 19, 2016 the temporary well was gauged. No phase-separated hydrocarbon was detected in the well. The depth to water was 18.95 feet btoc. The groundwater level was approximately 16.95 feet bgl. The depth to the bottom of the well was 20.50 feet bgl. The fluid column in the well was 1.55 feet in thickness.

On September 20, 2016 at approximately 08:56 a.m. the well was gauged with the water level measured at 10.58 feet btoc (8.58 feet bgl). The well was bailed dry after removing approximately 6 gallons of groundwater during development. The purge water was clear to amber and exhibited a hydrocarbon odor. All purge water was disposed at the bundle cleaning pad.

On September 21, 2016 the well was gauged with the water level measured at 10.74 feet btoc (8.74 feet bgl). The well was sampled at 08:50 a.m. There was enough groundwater to collect samples for a full analytical suite. Immediately after the groundwater sample collection the well casing and screen were removed and the borehole was grouted.

Section 5
Regulatory Criteria

The applicable screening and potential cleanup levels are specified in NMED's *Risk Assessment Guidance for Site Investigations and Remediation* dated July 2015 and in the Environmental Protection Agency's (EPA) Regional Screening Levels dated November 2015.

For non-residential properties (e.g., the Gallup Refinery), the soil screening levels must be protective of commercial/industrial workers throughout the upper one foot of surface soils and construction workers throughout the upper ten feet based on NMED criteria. NMED residential soil screening levels are applied to the upper ten feet and soil screening levels for protection of groundwater apply throughout the vadose zone. EPA soil screening levels for direct contact exposure apply to the upper two feet of the vadose zone. To achieve closure as "corrective action complete without controls", the affected media must meet residential screening levels, which are presented in Table 5. Table 5 also provides a list of the available NMED and EPA soil screening levels for non-residential properties. While Table 5 indicates the various depths to which the individual soil screening levels are applicable, Table 7 discussed below does not include this level of detail.

The groundwater cleanup levels are based on New Mexico Water Quality Control Commission (WQCC) standards (20.6.2.7 WW NMAC, 20.6.2.3103, and 20.6.2.4103) unless there is a federal maximum contaminant level (MCL), in which case the lower of the two values is selected as the cleanup level. If neither a WCQQ standard nor an MCL is available, then the cleanup level is based on a NMED Tap Water Screening Level. If a NMED Tap Water Screening Level is not available for a constituent, then an EPA Regional Screening Level is used. If an EPA Regional Screening Level is for a carcinogenic compound, then the screening level is multiplied by 10 to bring the risk level to 1E-05 to be consistent with the NMED screening levels. Table 6 presents the groundwater cleanup levels, with the applicable cleanup level bolded.

The aforementioned Table 5 has soil screening levels for the soil-to-groundwater pathway that are based on a dilution/attenuation factor (DAF) of 1.0, which is NMED's most conservative screening level for this pathway. Based on comments received from NMED on June 14, 2018, the soil-to-groundwater pathway (DAF) screening levels were not used for comparison to site concentrations and are not included in Table 7.

The screening levels that are compared to individual soil sample results from SWMU No. 10 (Sludge Pits) are presented in Table 7. The screening levels included in Table 7 are based on residential and non-residential land use. For the non-residential screening levels, the lower of the construction worker scenario and commercial/industrial scenario screening levels for each constituent is included in the data tables if NMED screening levels are available. If NMED soil screening levels are not available for a particular constituent, then EPA soils screening levels are used. If an EPA soil screening level is for a carcinogenic compound, then the screening level is multiplied by 10 to bring the risk level to 1E-05 to be consistent with the NMED screening levels. The screening levels in Table 7 have not been segregated based on depth of the soil sample as discussed above for Table 5. The site concentrations in Table 7 are compared to the residential screening levels, with concentrations that exceed screening levels highlighted. The screening levels that are compared to individual groundwater sample results from SWMU No. 10 are presented in Table 8.

A review of the NMED guidelines for TPH indicates that the TPH screening levels were developed based on screening levels and compositional assumptions developed by the Massachusetts Department of Environmental Protection (MADEP). The analytical results, as presented in Table 7, are reported for gasoline range organics (C6-C10), diesel range organics (>C10-C28), and motor oil range organics (>C28-C35). The applicable TPH screening levels for comparison to the individual soil samples are selected from Table 6-2 of the NMED guidance (NMED, 2015).

There are no soil screening levels for gasoline range organics and the individual compounds listed for groundwater (gasoline range criteria) are included in the list of analytes used for site samples. As there could have been a variety of petroleum types (e.g., crude oil or various refined products) going to the former Sludge Pits, the screening level for “unknown oil” was selected for comparison to the diesel range and motor oil range soil analytical results.

The motor oil range analytical results are compared to the “unknown oil” screening level as directed by NMED. However, it is noted that the laboratory analyses for motor oil range organics only reports results for the >C28 to C35 hydrocarbon range, while the “unknown oil” screening level is based on a hydrocarbon mixture assumed to include only C11-C22 aromatics.

Some of the individual constituents reported by the laboratory do not have screening levels but were all non-detect with respect to soil, except 4-isopropyltoluene and 3+4-methylphenol. With respect to groundwater, there were also detections of constituents that do not have screening levels. The constituents detected in groundwater that do not have screening levels include, 2-hexanone, 4-

isopropyltoluene, 4-methyl-2-pentanone, n-butylbenzene, n-propylbenzene, sec-butylbenzene, and carbazole. None of these constituents are classified as a known carcinogen.

Section 6
Site Impacts

This section discusses the chemical analyses performed and presents the analytical results that were obtained through the analysis of soil and groundwater samples, which were collected at the former Sludge Pits. The results for soils and groundwater analyses are presented and compared to applicable screening levels, as described in Section 5.0.

6.1 Soil Analytical Results

Soil samples were analyzed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico using the following methods for organic constituents:

- SW-846 Method 8260/5035 volatile organic compounds;
- SW-846 Method 8270C semi-volatile organic compounds; and
- SW-846 Method 8015D gasoline, diesel, and motor oil range petroleum hydrocarbons.

Soil samples were analyzed for the following metals using the indicated analytical methods, respectively.

Analyte	Analytical Method
Antimony	SW-846 Method 6010B
Arsenic	SW-846 Method 6010B
Barium	SW-846 Method 6010B
Beryllium	SW-846 Method 6010B
Cadmium	SW-846 Method 6010B
Chromium	SW-846 Method 6010B
Cobalt	SW-846 Method 6010B
Cyanide	SW-846 Method 9012B
Hexavalent Chromium	SW-846 Method 3060A/7196A
Iron	SW-846 Method 6010B
Lead	SW-846 Method 6010B
Mercury	SW-846 Method 7471

Analyte	Analytical Method
Manganese	SW-846 Method 6010B
Nickel	SW-846 Method 6010B
Selenium	SW-846 Method 6010B
Silver	SW-846 Method 6010B
Vanadium	SW-846 Method 6010B
Zinc	SW-846 Method 6010B

The analytical results for soil samples collected at the former Sludge Pits are summarized in Table 7. The individual results that exceed the applicable cleanup levels are highlighted, as noted in the table footnotes. Maps showing the distribution of constituents detected in soils above the residential screening levels are included as Figures 13 through 16. The concentrations shown on figures that exceed the screening levels in Table 7 are underlined on the figures. The laboratory analytical reports are included in Appendix D and the data validation of the results, which includes the analytical results for the associated QA/QC samples, is included in Appendix E. The constituents that have concentrations in soils above screening levels as measured in samples collected from the Sludge Pits are discussed below.

Arsenic was detected at a concentration above the residential screening level of 4.25 mg/kg in one soil sample [SWMU 10-20 (2-2.5')] at a concentration of 5.4 mg/kg. The concentrations are shown on Figure 13. The detected concentrations range from 0.84 mg/kg to 5.4 mg/kg.

Chromium was detected at a concentration above the residential screening level of 96.6 mg/kg in one soil sample [SWMU 10-20 (2-2.5')] at a concentration of 150 mg/kg. The detected concentrations range from 2.5 mg/kg to 150 mg/kg. The results are presented on Figure 14.

Diesel Range Organics were detected at concentrations above the residential soil screening level of 1,000 mg/kg in 12 soil samples [SWMU 10-4 (2-4'), SWMU 10-5 (0-2'), SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), SWMU 10-11 (4-6'), SWMU 10-13 (6-8'), SWMU 10-14 (6-8') SWMU 10-17 (6-8'), SWMU 10-20 (2-2.5'), SWMU 10-20 (8-10'), and SWMU 10-20 (10-12')] as indicated with highlighting in Table 7. The detected concentrations range from 2.9 to 9,700 mg/kg. The concentrations are plotted on Figure 15.

Motor Oil Range Organics were detected at concentrations above the residential soil screening level of 1,000 mg/kg in four soil samples [SWMU 10-5 (0-2'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), and

SWMU 10-20 (2-2.5')] as indicated with highlighting in Table 7. The detected concentrations range from 53 mg/kg to 6,700 mg/kg. The concentrations are plotted on Figure 16.

6.2 Groundwater Analytical Results

The groundwater samples were analyzed for organic constituents by the following methods:

- SW-846 Method 8260 volatile organic compounds;
- SW-846 Method 8270 semi-volatile organic compounds;
- SW-846 Method 8015D gasoline range organics; and
- SW-846 Method 8015M/D diesel and motor oil range organics.

Groundwater samples were analyzed for the following total and dissolved metals using the indicated analytical methods.

Analyte	Analytical Method
Antimony	SW-846 Method 200.8
Arsenic	SW-846 Method 200.8
Barium	SW-846 Method 200.7
Beryllium	SW-846 Method 200.7
Cadmium	SW-846 Method 200.7
Chromium	SW-846 Method 200.7
Cobalt	SW-846 Method 200.7
Iron	SW-846 Method 200.7
Lead	SW-846 Method 200.8
Manganese	SW-846 Method 200.7
Nickel	SW-846 Method 200.7
Selenium	SW-846 Method 200.8
Silver	SW-846 Method 200.7
Vanadium	SW-846 Method 200.7
Zinc	SW-846 Method 200.7

Groundwater samples were also analyzed for the following total metals using the indicated analytical methods.

Analyte	Analytical Method
Cyanide	SW-846 Method 9012B
Hexavalent Chromium	SW-846 Method 7199
Mercury	SW-846 Method 245.1

In addition, groundwater samples were analyzed for chloride, fluoride, and sulfate using EPA method 300.

The analytical results and the applicable cleanup levels are presented in Table 8. The individual results that exceed the applicable cleanup levels are highlighted. Maps depicting the distribution of the various constituents detected in groundwater samples above the screening levels are provided in Figures 17 through 37, with the concentrations that exceed the screening levels underlined. The results for the associated QA/QC samples and the data validation are provided in Appendix E. The laboratory analytical reports are included in Appendix D.

All of the groundwater samples collected at the former Sludge Pits were collected from temporary well completions and there are numerous metals detected in the total analyses at concentrations above their respective screening levels. The samples collected at temporary wells SWMU 10-16 and SWMU 10-21 were not analyzed for metals because the wells did not produce a sufficient volume of water to run all analyses. The constituents with reported concentrations that exceed screening levels are discussed below.

Arsenic was detected above the screening level of 0.01 mg/l in eight of the nine samples collected when reviewing both the total and dissolved analyses. This includes samples collected at SWMU 10-3, SWMU 10-5, SWMU 10-11, SWMU 10-12, SWMU 10-14, SWMU 10-15, SWMU 10-20, and SWMU 10-25. The results (total and dissolved analyses) are shown on Figure 17. The detected arsenic results range from 0.0025 to 0.029 mg/l.

For the total analyses, barium was detected above the screening level of 2.0 mg/l in three of the nine samples collected, including SWMU 10-11, SWMU 10-12, and SWMU 10-14 with concentrations ranging from 5.3 mg/l to 7.3 mg/l. However, only one of the samples (SWMU 10-25) from the dissolved analyses exceeds the screening level of 1.0 mg/l. The dissolved analyses range from 0.085 mg/l to 1.4 mg/l. Both the total and dissolved results are shown on Figure 18.

Similar to barium, beryllium was detected above the screening level of 0.004 mg/l in three of the nine samples collected, including SWMU 10-11, SWMU 10-12, and SWMU 10-14 with total concentrations ranging from 0.00043 mg/l to 0.037 mg/l. However, none of the samples from the dissolved analyses exceed the screening level. The detected dissolved analyses range from 0.0004 mg/l to 0.0009 mg/l. The total analytical results are shown on Figure 19.

Chromium and vanadium were both detected above their respective screening levels in the total analyses of groundwater samples collected from the same three temporary wells (SWMU 10-11, SWMU 10-12, and SWMU 10-14), while none of the dissolved analyses exceed screening levels. Chromium total analyses for detected results range from 0.0051 mg/l to 0.17 mg/l vs. the screening level of 0.05 mg/l (Figure 19). Dissolved analyses (detected results) for chromium range from 0.0039 mg/l to 0.0094 mg/l. All results for chromium VI were non-detect except for SWMU 10-20, which had a reported concentration of 0.0005 mg/l vs. the screening level of 0.000252 mg/l (Figure 19). The detected results for total vanadium range from 0.0068 mg/l to 0.17 mg/l in comparison to a screening level of 0.0631 mg/l and are shown on Figure 22. The detected results for dissolved vanadium range from 0.002 mg/l to 0.016 mg/l.

Cobalt (total analyses) was detected at concentrations above the screening in six (SWMU 10-1, SWMU 10-11, SWMU 10-12, SWMU 10-14, SWMU 10-15, and SWMU 10-20) of the nine groundwater samples collected, but none of the dissolved analyses exceed the screening level. The total cobalt analyses range from 0.0033 mg/l to 0.14 mg/l vs. the screening level of 0.006 mg/l (Figure 19). The dissolved analyses for cobalt range from 0.0035 mg/l to 0.023 mg/l in comparison to the screening level of 0.05 mg/l.

Iron was detected above the screening level in samples analyzed for total (four exceedances at SWMU 10-1, SWMU 10-11, SWMU 10-12 and SWMU 10-14) and dissolved analyses (two exceedances at SWMU 10-12 and SWMU 10-14). The total analyses range from 1.9 mg/l to 140 mg/l in comparison to a screening level of 13.8 mg/l. The dissolved analyses range from 0.011 mg/l to 3.9 mg/l vs. a screening level of 1.0 mg/l. The total and dissolved analyses results are shown on Figure 20.

Lead (total analyses) was detected at concentrations above the screening in four (SWMU 10-1, SWMU 10-11, SWMU 10-12, and SWMU 10-14) of the nine groundwater samples collected, but none of the dissolved analyses exceed the screening level (Figure 21). The total lead analyses range

from 0.0021 mg/l to 0.28 mg/l vs. the screening level of 0.015 mg/l. The dissolved analyses for lead range from 0.00074 mg/l to 0.0068 mg/l in comparison to the screening level of 0.015 mg/l.

Manganese was detected above the screening levels in both total and dissolved analyses. The total concentration screening level of 2.0 mg/l was exceeded in five of the groundwater samples collected at temporary wells SWMU 10-11, SWMU 10-12, SWMU 10-14, SWMU 10-15, and SWMU 10-25. The total analyses results range from 0.52 mg/l to 22 mg/l. All nine of the analyses of groundwater detected concentrations of dissolved manganese above the screening level of 0.2 mg/l, with concentrations ranging from 0.27 mg/l to 3.9 mg/l. The total and dissolved analyses results are shown on Figure 21.

One groundwater sample, which was collected at temporary well SWMU 10-15, has concentrations of nickel that exceed the screening level of 0.372 mg/l in both total and dissolved analyses. The detected results for the total analyses range from 0.0044 mg/l to 0.64 mg/l, while the detected results for dissolved analyses range from 0.0028 mg/l to 0.65 mg/l. The total and dissolved analyses are shown on Figure 22.

Chloride was detected above the screening level in all nine groundwater samples with concentrations ranging from 330 mg/l to 7,100 mg/l vs. the screening level of 250 mg/l. Sulfate was detected above the screening level of 600 mg/l in one groundwater sample collected at temporary well SWMU 10-3. The sulfate concentrations range from 110 mg/l to 1,100 mg/l. The chloride and sulfate concentrations are shown on Figure 23.

1,2,4-Trimethylbenzene was detected above the screening level of 15 micrograms per liter (ug/l) in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at concentrations of 64 ug/l, 220 ug/l, and 170 ug/l, respectively. The detected concentrations range from 0.18 ug/l to 210 ug/l and are shown on Figure 24.

The screening level for 1,3,5-Trimethylbenzene was exceeded in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 with detected results of 22 ug/l, 64 ug/l, and 46 ug/l, respectively, vs. the screening level of 12 ug/l. The detected concentrations range from 3.9 ug/l to 64 ug/l and are shown on Figure 25.

1-Methylnaphthalene was detected above the screening level of 11 ug/l in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at concentrations of 70 ug/l, 170 ug/l,

and 120 ug/l, respectively. The detected concentrations range from 3.1 ug/l to 170 ug/l and are shown on Figure 26.

2-Methylnaphthalene was detected above the screening level of 36 ug/l in the groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at concentrations of 98 ug/l, 240 ug/l, and 180 ug/l, respectively. The detected concentrations range from 1.5 ug/l to 240 ug/l and are shown on Figure 27.

The screening level for 2,4-dimethylphenol was exceeded in the groundwater samples collected at two locations (SWMU 10-20 and SWMU 10-25) with results of 62,000 ug/l and 1,100 ug/l, respectively, vs. the screening level of 354 ug/l. The analytical results are shown on Figure 28.

The screening level for 2-methylphenol was exceeded in the groundwater samples collected at two locations (SWMU 10-20 and SWMU 10-25) with results of 130,000 ug/l and 2,6100 ug/l, respectively, vs. the screening level of 930 ug/l. The analytical results are shown on Figure 29.

The screening level for 3+4-methylphenol was exceeded in the groundwater sample collected at one location (SWMU 10-20) with a result of 190,000 ug/l vs. the screening level of 930 ug/l. The analytical results are shown on Figure 30.

The screening level for benzene was exceeded in the groundwater samples collected at three locations (SWMU 10-5, SWMU 10-20, and SWMU 10-25) with results of 27 ug/l, 1,600 ug/l, and 320 ug/l, respectively, vs. the screening level of 5 ug/l. The detected concentrations range from 0.15 ug/l to 1,600 ug/l and are shown on Figure 31.

Bromodichloromethane was detected in one groundwater sample and the screening level was also exceeded in this sample collected at location SWMU 10-21 with a result of 1.8 ug/l vs. the screening level of 1.34 ug/l. The analytical results are shown on Figure 32.

Methyl tert-butyl ether (MTBE) was detected slightly above the screening level of 143 ug/l in one groundwater sample, which was collected at SWMU 10-15, at a concentration of 150 ug/l. The detected concentrations range from 0.8 ug/l to 150 ug/l and are shown on Figure 33. In addition to the SWMU 10 groundwater results, the MTBE concentrations detected at boring location SWMU 1-37 and OAPIS-1, which were installed during investigation of nearby SWMUs 1 and 14, are also shown. These locations show higher concentrations up-gradient of temporary well SWMU 10-15 suggesting

other sources for MTBE (e.g., the Old API Separator and a known leak from an up-gradient wastewater pipeline that was recently repaired) (Western Refining Southwest, Inc., 2015).

Naphthalene was detected above the screening level of 1.65 ug/l in three groundwater samples collected at SWMU 10-11, SWMU 10-20, and SWMU 10-25 at concentrations of 45 ug/l, 310 ug/l, and 200 ug/l, respectively. The detected concentrations range from 0.52 ug/l to 310 ug/l and are shown on Figure 34.

The screening level for phenol was exceeded in the groundwater sample collected at one location (SWMU 10-20) with a result of 89,000 ug/l vs. the screening level of 5,760 ug/l. The analytical results are shown on Figure 35.

The screening level for toluene was exceeded in the groundwater sample collected at one location (SWMU 10-20) with a result of 4,000 ug/l vs. the screening level of 750 ug/l. The analytical results are shown on Figure 36.

The screening level for xylenes was exceeded in the groundwater samples collected at two locations (SWMU 10-20 and SWMU 10-25) with results of 1,900 ug/l and 1,200 ug/l, respectively, vs. the screening level of 620 ug/l. The analytical results are shown on Figure 37.

6.3 General Groundwater Chemistry

The measurement of field purging parameters included measurement of groundwater pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature. The results of the measurements are included in Table 4 and fluid levels measured prior to purging are also presented in Table 4.

Section 7
Conclusions and Recommendations

This section summarizes and provides an evaluation of the potential impacts as shown in field screening data and analytical data. This is followed by recommendations for any future actions.

7.1 Conclusions

Soils

There are no reported concentrations in soil for individual constituents that exceed the residential soil screening levels, with the exception of one sample [SWMU 10-20 (2-2.5')], which exceeded for arsenic and chromium. Otherwise, only the results for DRO and MRO exceed the residential screening levels.

The detection of DRO at a concentration of 1,200 mg/kg in comparison to the screening level 1,000 mg/kg in sample SWMU 10-14 (6-8') was defined to the southwest at boring SWMU 10-16. The lateral extent of impacts to soil were defined to the east and southeast in borings SWMU 10-1, SWMU 10-2, and SWMU 10-7. The lateral extent was defined to the west at borings SWMU 10-12 and SWMU 10-16. The lateral extent was defined on the northeast at borings SWMU 10-15 and SWMU 10-21. The vertical extent of impacts at concentrations above the screening levels was defined at every boring location with the single exception of SWMU 10-17. Boring SWMU 10-17 was completed with a hand auger due to access limitations to a depth of 8 feet within an impacted interval. This same impacted interval (e.g., 6 feet– 8 feet) was also identified in nearby boring SWMU 10-13. Soil boring SWMU 10-13 was accessible to the drilling rig and this boring was extended to bedrock and the vertical extent of impacts was defined for this area.

Groundwater

Of the 25 borings completed, 11 encountered saturation. Three of the borings that did not encounter saturation were completed with a hand auger and possibly saturation may be present at a deeper interval. The four temporary wells to the east (SWMU 10-1, SWMU 10-3, SWMU 10-5, and SWMU 21) had particularly low yields while the temporary wells to the west (SWMU 10-11, SWMU 10-12 and SWMU 10-14), where a thicker sand interval was present, indicated higher yields.

There are a seemingly large number of metals detected at concentrations above residential/tap water screening levels in groundwater samples collected from the soil borings. The metals analytical results may have been affected as the result of collecting groundwater samples at low producing temporary wells completions, which tend to produce more turbid water samples than permanent well completions in more productive aquifers. The metal screening levels were exceeded in every soil boring from which a groundwater sample was collected for metals analyses.

Fourteen organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene, 1,3,5-trimethylbenzene, benzene, bromodichloromethane, MTBE, naphthalene, toluene, xylenes, 2,4-dimethylphenol, 2-methylphenol, 3+4-methylphenol, and phenol) were detected in groundwater samples collected from soil borings at concentrations above screening levels. Many of the reported concentrations are only slightly above the screening levels (i.e., generally less than one order of magnitude above the screening level); however, benzene, 2,4-dimethylphenol, 3+4-methylphenol, 2-methylphenol, and naphthalene concentrations exceed the screen levels by more than two orders of magnitude. Most of the detections above screening levels occur at borings SWMU 10-11, SWMU 10-20, and SWMU 10-25. MTBE was detected above the screening level at a single location (SWMU 10-15) at a concentration of 150 ug/l vs. the screening level of 143 ug/l. Boring SWMU 10-15 is located cross- to up-gradient of most of the area of SWMU 10 (Figure 12). Based on the distribution of the MTBE concentrations and the hydraulic gradient, it appears that the elevated concentration of MTBE in boring SWMU 10-15 is associated with up-gradient sources (e.g., the Old API Separator and a leaking wastewater pipeline that was repaired).

Groundwater impacts for organic constituents were defined to the east in borings SWMU 10-1 and SWMU 10-21, to the southeast at boring SWMU 10-7 (dry), to the south/southwest at borings SWMU 10-14 and 10-16, and to the west at boring SWMU 10-12. The groundwater impacts from the former Sludge Pits are defined to the northeast at boring SWMU 10-4, which was drilled to a depth of 20 feet but did not encounter saturation. An additional boring (SWMU 10-15) was drilled further to the northeast based on impacted soil at SWMU 10-4 at a depth of 2 feet - 4 feet. The soil impact was not present at SWMU 10-15 and as discussed above, the groundwater impact (MTBE detection) at SWMU 10-15 does not appear to be associated with the former Sludge Pits. The impacts to groundwater are not defined to the north, as eight organic constituents were found to be present above screening levels in boring SWMU 10-25.

7.2 Recommendations

No additional soil borings/temporary wells are recommended at this time.

To determine if site concentrations of inorganic constituents in soil are reflective of naturally occurring concentrations unaffected by site activities, Western proposes to conduct a background study. Western will prepare a Background Concentrations Investigation Work Plan and submit it for review by NMED.

Section 8
References

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Tables

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TABLE 1
1990 RCRA Facility Investigation Soil Analytical Data
Western Refining Southwest, Inc. - Gallup Refinery

Analyte	Sample ID	RFI1001 V0.0	RFI1001 V3.0	RFI1001 D3.0	RFI1003 V12.5	RFI1003 V9.0	RFI1003 V6.0	RFI1003 V3.0	RFI1003 V0.0	RFI1004 V0.0	RFI1004 V3.0	RFI1004 V6.0	RFI1004 V9.0	RFI1004 V12.5	RFI1005 V0.0	RFI1005 V3.0	RFI1005 V6.0	RFI1005 V9.0	RFI1005 V12.5	RFI1005 D3.0	RFI1002 V0.0	RFI1002 V3.0	RFI1002 V6.0	RFI1002 V9.0	RFI1002 V12.5	RFI1005 D12.5	NMED Soil Screening Levels				EPA Regional Soil Screening Levels			
	Sample Depth (ft)	0	3	3	12.5	9	6	3	0	0	3	6	9	12.5	0	3	6	9	12.5	3	0	3	6	9	12.5	12.5	Residential Soil (mg/kg)	Industrial/ Occupational Soil (mg/kg)	Construction Worker Soil (mg/kg)	Risk-based SSL for a DAF of 1 (mg/kg)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Groundwater Protection Risk-based (mg/kg)	Groundwater Protection MCL-based (mg/kg)
	Sample Date	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990								
Metals																																		
Antimony	mg/kg	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	NA	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	3.13E+01	4.54E+02	1.24E+02	6.61E-01	3.10E+01	4.10E+02	6.60E-01	2.70E-01
Arsenic	mg/kg	**0.97**	<1.0	<0.50	<1.0	**0.52**	**0.58**	**0.90**	**0.65**	**0.60**	**0.64**	**2.4**	**0.6**	<1.0	<1.0	**0.52**	**27.9**	**0.58**	<1.0	NA	**0.52**	**0.79**	**0.58**	<1.0	<0.50	<0.50	3.90E+00	1.77E+01	5.30E+01	1.31E-02	3.90E-01	1.60E+00	1.30E-03	2.90E-01
Barium	mg/kg	**372**	107	105	**392**	152	178	292	**317**	280	195	**422**	213	164	**315**	**321**	**700**	48.7	187	NA	188	231	**332**	201	171	124	1.56E+04	2.23E+05	4.35E+03	3.01E+02	1.50E+04	1.90E+05	3.00E+02	8.20E+01
Beryllium	mg/kg	0.7	1.0	1.1	1.1	1.0	1.0	0.65	0.96	0.93	0.79	0.80	1.00	1.1	0.88	0.85	0.76	1.4	1.2	NA	1.0	0.90	0.90	1.4	0.87	1.1	1.56E+02	2.26E+03	1.44E+02	5.77E+01	1.60E+02	2.00E+03	5.80E+01	3.20E+00
Cadmium	mg/kg	<0.50	0.70	<0.50	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	<0.50	<0.50	**1.5**	<0.50	<0.50	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.03E+01	8.97E+02	2.77E+02	1.37E+00	7.00E+01	8.00E+02	1.40E+00	3.80E-01
Chromium total results - CR III SL	mg/kg	60.1	6.1	7.8	7.5	5.9	6.5	6.1	9.5	5.6	11.6	398	21.7	7.2	6.8	6.3	4020	11.6	8.9	NA	7.0	117	6.7	8.0	6.4	6.1	1.17E+05	1.70E+06	4.65E+05	9.86E+07	1.20E+05	1.50E+06	9.90E+07	NA
Chromium total resutls - CR VI SL	mg/kg	**60.1**	**6.1**	**7.8**	**7.5**	**5.9**	**6.5**	**6.1**	**9.5**	**5.6**	**11.6**	**398**	**21.7**	**7.2**	**6.8**	**6.3**	**4020**	**11.6**	**8.9**	NA	**7.0**	**117**	**6.7**	**8.0**	**6.4**	**6.1**	2.97E+00	6.31E+01	6.56E+01	8.31E-03	2.30E+02	1.40E+03	2.10E+00	NA
Cobalt	mg/kg	**2.0**	**3.6**	**4.6**	**3.2**	**3.4**	**2.8**	**2.0**	**2.6**	**2.8**	**2.2**	**4.8**	**3.8**	**4.4**	**4.0**	**4.4**	**8.4**	**5.7**	**5.1**	NA	**4.3**	**4.4**	**3.9**	**6.0**	**5.4**	**3.9**	NA	NA	NA	NA	2.30E+01	3.00E+02	4.90E-01	NA
Copper	mg/kg	10.3	5.9	7.4	7.0	5.6	6.1	4.3	7.4	5.7	4.1	**29.0**	6.2	6.9	9.2	4.6	**215**	11.8	7.2	NA	6.4	16.5	5.2	7.7	7.7	7.8	3.10E+03	4.54E+04	1.24E+04	2.14E+01	NA	NA	NA	NA
Lead	mg/kg	11.1	5.5	6.3	7.8	8.1	6.5	5.5	8.4	8.2	7.0	50.0	12.5	13.3	13.2	11.8	337	16.1	14.2	NA	13.8	19.3	13.5	14.9	11.9	16.0	4.00E+02	8.00E+02	8.00E+02	NA	4.00E+02	8.00E+02	NA	NA
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**1.3**	<0.10	<0.10	<0.10	<0.10	**2.9**	<0.10	<0.10	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.56E+01	7.36E+01	1.36E+01	3.27E-02	4.30E+00	2.40E+01	3.00E-02	1.00E-01
Nickel	mg/kg	7.0	6.7	9.1	8.5	6.8	6.5	5.4	6.5	6.1	5.3	9.0	7.9	8.0	5.8	6.8	19.2	11.3	9.3	NA	6.4	9.2	6.5	9.5	8.5	6.9	1.56E+03	2.25E+04	6.19E+03	4.77E+01	1.40E+04	6.90E+04	4.80E+01	NA
Potassium	mg/kg	972	1310	1660	1410	1340	1070	856	1020	853	783	2320	1200	1210	850	834	3920	1450	1250	NA	806	1310	841	1380	1410	1010	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.91E+02	5.68E+03	1.55E+03	9.65E-01	3.90E+02	5.10E+03	9.50E-01	2.60E-01
Vanadium	mg/kg	16.3	14.0	16.3	17.5	14.3	12.9	15.2	15.7	15.5	14.4	18.6	13.9	13.7	14.5	14.1	24.2	18.7	16.2	NA	15.4	18.2	18.8	16.5	18.0	14.0	3.91E+02	5.68E+03	1.55E+03	1.83E+02	5.50E+02	7.20E+03	2.60E+02	NA
Zinc	mg/kg	81.3	14.7	17.7	16.1	13.9	13.0	12.9	16.4	14.0	15.2	81.2	12.5	12.5	11.8	13.1	538	17.9	14.3	NA	13.4	228	11.2	15.2	15.0	12.4	2.35E+04	3.41E+05	9.29E+04	6.82E+02	2.30E+04	3.10E+05	6.80E+02	NA
Method 8240																																		
1,1,1- Trichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.56E+04	7.89E+04	1.48E+04	2.91E+00	9.00E+03	3.90E+04	3.30E+00	7.20E-02
1,1,2,2-Tetrachloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.02E+00	4.35E+01	2.21E+02	2.13E-04	5.90E-01	2.90E+00	2.80E-05	NA
1,1,2- Trichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.81E+00	1.33E+01	4.72E+02	1.12E-04	1.10E+00	5.50E+00	8.20E-05	1.70E-03
1,1- Dichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.45E+01	3.59E+02	1.70E+03	5.98E-03	3.40E+00	1.70E+01	7.00E-04	NA
1,1-Dichloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.49E+02	2.29E+03	4.32E+02	1.16E-01	2.50E+02	1.10E+03	1.20E-01	2.60E-03
1,2,3-Trichloropropane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.97E-02	3.76E+01	7.23E+00	2.50E-06	9.10E-02	4.10E-01	4.40E-06	NA
1,2-Dichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.89E+00	4.35E+01	5.87E+01	3.56E-04	4.50E-01	2.20E+00	4.40E-05	1.50E-03
1,2-Dichloropropane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.52E+01	8.44E+01	2.50E+01	1.07E-03	9.30E-01	4.70E+00	1.30E-04	1.70E-03
2-Butanone (MEK)	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<120	<20	<5	<5	<340	<10	<5	<5	<5	<5	<5	<5	<5	<5	3.71E+04	3.75E+05	8.43E+04	1.27E+00	2.80E+04	1.90E+05	1.50E+00	NA
2-Hexanone	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	2.0E+02	1.3E+03	8.8E-03	NA
4-Methyl-2-pentanone (MIBK)	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<120	<20	<5	<5	<340	<10	<5	<5	<5	<5	<5	<5	<5	<5	6.66E+04	8.68E+05	2.21E+05	3.86E+00	6.10E+04	6.10E+05	4.40E+00	NA
Benzene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.7**	<50.0	<12.0	<2.0	<0.5	<0.5	**37**	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.54E+01	8.47E+01	1.38E+02	1.73E-03	1.10E+00	5.60E+00	2.30E-04	2.80E-03
Bromodichloromethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.41E+00	3.01E+01	1.43E+02	2.71E-04	2.80E-01	1.40E+00	3.30E-05	NA
Bromoform	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.16E+02	2.42E+03	4.76E+03	6.04E-01	6.10E+01	2.20E+02	2.30E-03	NA
Bromomethane	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	1.65E+01	8.65E+01	1.64E+01	1.92E-03	7.90E+00	3.50E+01	2.20E-03	NA
Carbon disulfide	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.53E+03	8.33E+03	1.58E+03	2.83E-01	6.70E+02	3.00E+03	2.70E-01	NA
Carbon tetrachloride	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.08E+01	5.98E+01	2.26E+02	1.60E-03	2.50E-01	1.30E+00	7.90E-05	2.00E-03
Chlorobenzene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.76E+02	2.12E+03	4.06E+02	4.92E-02	3.10E+02	1.50E+03	6.80E-02	7.50E-02
Chloroethane	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.86E+00	3.27E+01	1.54E+02	4.59E-04	3.00E-01	1.50E+00	5.50E-05	NA
Chloromethane	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	2.75E+02	1.29E+03	2.41E+02	4.40E-02	1.20E+02	5.10E+02	4.90E-02	NA
1,2- Dichloroethene (cis/trans)	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.56E+02	2.27E+03	6.19E+02	1.84E-02	7.80E+02	1.00E+04	1.10E-01	2.10E-02
cis-1,3-Dichloropropene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.37E+01	1.77E+02	2.09E+02	1.24E-03	1.70E+00	8.40E+00	1.60E-04	NA
Di bromochloromethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.21E+01	6.24E+01	3.32E+02	3.31E-04	7.00E-01	3.40E+00	4.00E-05	NA
Dibromomethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	7.80E+02	1.00E+04	9.10E-02	NA
Dichlorodifluoromethane	ug/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<200	<50	<8	<2.0	<2.0	<130	<4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	1.68E+02	7.98E+02	1.49E+02	3.72E-01	1.90E+02	7.80E+02	6.10E-01	NA
Ethylbenzene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**5.6**	**81**	**43**	<2.0	<0.5	<0.5	**76**	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.84E+01	3.78E+02	1.83E+03	1.30E-02	5.70E+00	2.90E+01	1.90E-03	8.90E-01
Methylene chloride	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.09E+02	4.70E+03	1.12E+03	4.12E-02	1.10E+01	5.40E+01	1.20E-03	1.30E-03
Styrene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.28E+03	5.00E+04	9.99E+03	1.39E+00	6.50E+03	3.80E+04	2.00E+00	1.20E-01
Tetrachloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.02E+00	3.66E+01	2.12E+02	4.30E-04	5.70E-01	2.70E+00	5.20E-05	2.40E-03
Toluene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**14**	**220**	**120**	<2.0	<0.5	<0.5	**290**	**2.6**	0.98	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.68	5.27E+03	5.77E+04	1.34E+04	1.27E+00	5.00E+03	4.60E+04	1.70E+00	7.60E-01
trans-1,2-Dichloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.70E+02	1.44E+03	2.73E+02	2.69E-02	1.10E+02	5.00E+02	3.40E-02	3.20E-02
trans-1,3-Dichl oropropene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.37E+01	1.77E+02	2.09E+02	1.24E-03	1.70E+00	8.40E+00	1.60E-04	NA
Trichloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.77E+00	4.13E+01	7.68E+00	1.05E-03	2.80E+00	1.40E+01	6.10E-04	1.90E-03
Trichlorofluoromethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.41E+03	6.94E+03	1.30E+03	8.89E-01	8.00E+02	3.40E+03	8.40E-01	NA
Vinyl chloride	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<2.5	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	7.28E-01	2.61E+01	1.49E+02	5.42E-05	6.00E-02	1.70E+00	5.60E-06	7.00E-04
Xylenes (total)	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**54**	**470**	**310**	<2.0	<0.5	<0.5	**540**	**9.7**	**1.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.98**	8.14E+02	3.98E+03	7.43E+02	1.56E-01	6.00E+02	2.60E+03	2.30E-01	1.10E+01
Vinyl acetate	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	2.56E+03	1.23E+04	2.30E+03	7.59E-02	NA	NA	NA	NA
2-Chloroethyl vinyl ether	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	ug/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<100	<250	<40	<10	<10	<670	<20	<10	<10	<10	<10	<10	<10	<10	<10	4.04E-01	1.92E+00	3.56E-01	7.28E-06	NA	NA	NA	NA
Acrylonitrile	ug/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<100	<250	<40	<10	<10	<670	<20	<10	<10	<10	<10	<10	<10	<10	<10	4.55E+00	2.43E+01	3.76E+01	8.46E-05	NA	NA	NA	NA
Ethanol	ug/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<100	<250	<40	<10	<10	<670	<20	<10	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl methacrylate	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	4.55E+03	3.80E+04	2.79E+04	1.14E-01	NA	NA	NA	NA
Iodomethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	7.4E-03	3.2E-02	6.2E-07	NA
Method 8270																																		
1,2,4,5-Tetrachlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	7.30E+01	3.67E+02	6.87E+01	9.13E-03	8.70E+01	4.00E+02	1.30E-02	1.10E-01
1,2- Dichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.31E+03	1.40E+04	2.71E+03	2.80E-01	2.00E+03	1.00E+04	4.00E-01	6.60E-01
1,3- Dichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
1,4- Dichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.17E+01	1.77E+02	8.31E+02	3.19E-03	2.60E+00	1.30E+01	4.60E-04	8.10E-02
2,4,5-Trichlorophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	6.11E+03	6.84E+04	2.38E+04	1.04E+01	6.10E+03	6.20E+04	9.40E+00	NA
2,4,6-Trichlorophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+01	6.84E+02	2.38E+02	1.04E-01	4.40E+01	1.60E+02

TABLE 1
1990 RCRA Facility Investigation Soil Analytical Data
Western Refining Southwest, Inc. - Gallup Refinery

Analyte	Sample ID	RFI1001 V0.0	RFI1001 V3.0	RFI1001 D3.0	RFI1003 V12.5	RFI1003 V9.0	RFI1003 V6.0	RFI1003 V3.0	RFI1003 V0.0	RFI1004 V0.0	RFI1004 V3.0	RFI1004 V6.0	RFI1004 V9.0	RFI1004 V12.5	RFI1005 V0.0	RFI1005 V3.0	RFI1005 V6.0	RFI1005 V9.0	RFI1005 V12.5	RFI1005 D3.0	RFI1002 V0.0	RFI1002 V3.0	RFI1002 V6.0	RFI1002 V9.0	RFI1002 V12.5	RFI1005 D12.5	NMED Soil Screening Levels				EPA Regional Soil Screening Levels			
	Sample Depth (ft)	0	3	3	12.5	9	6	3	0	0	3	6	9	12.5	0	3	6	9	12.5	3	0	3	6	9	12.5	12.5	Residential Soil (mg/kg)	Industrial/ Occupational Soil (mg/kg)	Construction Worker Soil (mg/kg)	Risk-based SSL for a DAF of 1 (mg/kg)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Groundwater Protection Risk-based (mg/kg)	Groundwater Protection MCL-based (mg/kg)
	Sample Date	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990								
2-Chloronaphthalene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.26E+03	9.08E+04	2.48E+04	1.14E+01	6.30E+03	8.20E+04	1.80E+01	NA
2-Chlorophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.91E+02	5.68E+03	1.55E+03	1.16E-01	3.90E+02	5.10E+03	2.00E-01	NA
2-Methylnaphthalene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**290**	<5.0	**5**	<5.0	<5.0	**1400**	<5.0	<5.0	<5.0	<5.0	**56**	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	3.10E+02	4.10E+03	9.00E-01	NA
o-Cresol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**16**	<5.0	<5.0	<5.0	<5.0	<100	**34**	**19**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**16**	NA	NA	NA	NA	3.10E+03	3.10E+04	2.00E+00	NA
2- Nitroaniline	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	1.80E+02	1.80E+03	3.30E-02	NA
2-Nitrophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
3,3' -Dichlorobenzidine	ug/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<200	<10	<10	<10	<10	<20	<10	<10	<10	<10	1.08E+01	4.26E+01	3.64E+02	7.40E-03	1.10E+00	3.80E+00	2.30E-03	NA
m & p-Cresol(s)	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**26**	<5.0	<5.0	<5.0	<5.0	**120**	**68**	**34**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**28**	NA	NA	NA	NA	3.10E+02	3.10E+03	1.90E-01	NA
3- Nitroaniline	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-o-cresol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl Phenyl ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methvlphenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.40E+00	8.60E+00	1.20E-04	NA
4-Chlorophenyl	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
4- Nitroaniline	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	2.40E+01	8.60E+01	1.00E-03	NA
4-Nitrophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.44E+03	3.67E+04	1.86E+04	1.69E+01	3.40E+03	3.30E+04	2.70E+01	NA
Acenaphthylene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Aniline	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	8.50E+01	3.00E+02	3.40E-03	NA
Anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.72E+04	1.83E+05	6.68E+04	2.71E+02	1.70E+04	1.70E+05	4.50E+02	NA
Benzo(a)anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+00	2.34E+01	2.13E+02	7.83E-02	1.50E-01	2.10E+00	1.40E-02	NA
Benzo(a)pyrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E-01	2.34E+00	2.13E+01	2.60E-02	1.50E-02	2.10E-01	4.60E-03	3.10E-01
Benzo(b)fluoranthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+00	2.34E+01	2.13E+02	2.65E-01	1.50E-01	2.10E+00	4.70E-02	NA
Benzo(g,h,i)perylene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+01	2.34E+02	2.06E+03	2.60E+00	1.50E+00	2.10E+01	4.60E-01	NA
Benzoic acid	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.40E+05	2.50E+06	3.30E+01	NA
Benzyl alcohol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	3.10E+04	3.10E+05	4.20E+00	NA
bis(2-Chloroethoxy)-methane	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.80E+02	1.80E+03	2.30E-02	NA
bis(2-Chloroethy1) ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.68E+00	1.42E+01	7.78E+01	2.63E-05	1.90E-01	9.00E-01	2.70E-06	NA
bis(2-Chloroisopropyl)-ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	9.15E+01	4.54E+02	3.10E+03	2.33E-03	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.47E+02	1.37E+03	4.76E+03	8.62E+00	3.50E+01	1.20E+02	1.60E+00	2.00E+00
Butyl benzyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.60E+02	9.10E+02	6.70E-01	NA
Chrysene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+02	2.34E+03	2.06E+04	7.99E+00	1.50E+01	2.10E+02	1.40E+00	NA
Dibenz(a,h)anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E-01	2.34E+00	2.13E+01	8.46E-02	1.50E-02	2.10E+02	1.50E-02	NA
Diethyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.89E+04	5.47E+05	1.91E+05	9.66E+00	4.90E+04	4.90E+05	1.30E+01	NA
Dimethyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+05	6.84E+06	2.38E+06	8.06E+01	NA	NA	NA	NA
Di-n-butyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+03	6.84E+04	2.38E+04	6.97E+00	NA	NA	NA	NA
Di-n-octyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.29E+03	2.44E+04	8.91E+03	1.22E+02	2.30E+03	2.20E+04	2.10E+02	NA
Fluorene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	13	<5.0	<5.0	<5.0	<5.0	**100**	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.29E+03	2.44E+04	8.91E+03	2.03E+01	2.30E+03	2.20E+04	3.30E+01	NA
Hexachlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.04E+00	1.20E+01	1.03E+02	3.98E-03	3.00E-01	1.10E+00	2.90E-04	7.00E-03
Hexachlorobutadiene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.20E+00	2.20E+01	1.90E-03	NA
Hexachlorocyclopentadiene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.67E+02	4.10E+03	8.11E+02	5.27E-01	3.70E+02	3.70E+03	8.00E-01	1.80E-01
Hexachloroethane	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.28E+01	4.79E+02	1.67E+02	8.18E-03	3.50E+01	1.20E+02	3.20E-03	NA
Indeno(l,2,3-cd)pyrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+00	2.34E+01	2.13E+02	8.63E-01	1.50E-01	2.10E+00	1.60E-01	NA
Isophorone	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	5.12E+03	1.37E+05	4.75E+04	1.92E-01	5.10E+02	1.80E+03	2.20E-02	NA
Naphthalene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**54**	<5.0	<5.0	<5.0	<5.0	**340**	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.30E+01	2.41E+02	1.58E+02	3.57E-03	3.90E+00	2.00E+01	5.50E-04	NA
Nitrobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	5.35E+01	3.00E+02	3.32E+02	6.24E-04	4.40E+00	2.20E+01	7.10E-05	NA
N-Nitroso-di-n-propylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.90E-02	2.50E-01	1.10E-05	NA
N-Nitrosodimethylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	9.93E+02	3.91E+03	3.36E+04	5.65E-01	9.90E+01	3.50E+02	1.70E-01	NA
Pentachlorophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	8.94E+00	3.00E+01	3.10E+02	1.28E-02	3.00E+00	9.00E+00	3.90E-03	7.00E-03
Phenanthrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	28	<5.0	<5.0	<5.0	<5.0	1.83E+03	2.05E+04	7.15E+03	2.86E+01	NA	NA	NA	NA
Phenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	**71**	**32**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**28**	1.83E+04	2.05E+05	6.88E+04	4.97E+00	1.80E+04	1.80E+05	8.10E+00	NA
Pyrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.72E+03	1.83E+04	6.68E+03	8.94E+01	1.70E+03	1.70E+04	1.50E+02	NA
1- Naphthylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	7.30E+01	3.67E+02	6.87E+01	9.13E-03	NA	NA	NA	NA
1,2-Diphenylhydrazine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.7E-01	2.9E+00	2.5E-04	NA
1,3- Dinitrobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.2E+00	8.2E+01	1.8E-03	NA
1-Chloronaphthalene	ug/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.26E+03	9.08E+04	2.48E+04	1.14E+01	NA	NA	NA	NA
2- Naphthylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	3.0E-01	1.3E+00	2.0E-04	NA
2,3,4,6-Tetrachlorophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	1.8E+03	2.5E+04	1.5E+00	NA
2,6-Dinitrotoluene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+01	6.84E+02	2.38E+02	3.85E-02	NA	NA	NA	NA
2-Picoline	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
3-Methylcholanthrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	5.4E-03	1.0E-01	2.2E-03	NA
7,12-Dimethylbenz(a)-anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	4.5E-04	8.5E-03	9.9E-05	NA
a, a-Dimethylphenethylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	7.82E+03	1.14E+05	3.10E+04	9.17E-01	NA	NA	NA	NA
Diphenylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.5E+03	2.1E+04	5.8E-01	NA
Ethyl methanesulfonate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Methyl methanesulfonate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	5.4E+00	2.3E+01	1.6E-04	NA
N-Nitroso-di-n-butylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.89E-01	2.92E+00	2.19E+01	3.78E-05	NA	NA	NA	NA
N-Nitrosodiphenyl amine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	9.93E+02	3.91E+03	3.36E+04	5.65E-01	NA	NA	NA	NA
N-Nitrosopiperidine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.5E-01	1.1E+00	1.4E-05	NA
p-Dimethylaminoazobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.2E-01	5.0E-01	2.1E-05	NA
Pentachlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.89E+01	5.47E+02	1.91E+02	1.68E-01	NA	NA

TABLE 1
1990 RCRA Facility Investigation Soil Analytical Data
Western Refining Southwest, Inc. - Gallup Refinery

Analyte	Sample ID	RFI1001 V0.0	RFI1001 V3.0	RFI1001 D3.0	RFI1003 V12.5	RFI1003 V9.0	RFI1003 V6.0	RFI1003 V3.0	RFI1003 V0.0	RFI1004 V0.0	RFI1004 V3.0	RFI1004 V6.0	RFI1004 V9.0	RFI1004 V12.5	RFI1005 V0.0	RFI1005 V3.0	RFI1005 V6.0	RFI1005 V9.0	RFI1005 V12.5	RFI1005 D3.0	RFI1002 V0.0	RFI1002 V3.0	RFI1002 V6.0	RFI1002 V9.0	RFI1002 V12.5	RFI1005 D12.5	NMED Soil Screening Levels				EPA Regional Soil Screening Levels			
	Sample Depth (ft)	0	3	3	12.5	9	6	3	0	0	3	6	9	12.5	0	3	6	9	12.5	3	0	3	6	9	12.5	12.5	Residential Soil (mg/kg)	Industrial/ Occupational Soil (mg/kg)	Construction Worker Soil (mg/kg)	Risk-based SSL for a DAF of 1 (mg/kg)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Groundwater Protection Risk-based (mg/kg)	Groundwater Protection MCL-based (mg/kg)
	Sample Date	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990								
Phenacetin	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<50	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.4E+02	1.0E+03	9.7E-03	NA
phenyl ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<50	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Pronamide (kerb)	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<50	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	4.6E+03	6.2E+04	1.2E+00	NA

Bolded Value - concentration exceeds screening level
NA - Screening level not available or not analyzed
DAF - Dilution attentuation factor
NMED Screening levels (June 2012)
EPA Regional Screening Levels (Nov. 2012)

TABLE 2
1994 RCRA Facility Investigation Soil Analytical Data
Western Refining Southwest, Inc. - Gallup Refinery

Analyte	Sample ID	RFI1014 V19.0	RFI1014 V25.0	RFI1015 V19.0	RFI1015 V25.0	RFI1016 V19.0	RFI1016 V25.0	RFI1017 V19.0	RFI1017 V25.0	RFI1018 V19.0	RFI1018 V25.0	RFI1019 V19.0	RFI1019 V19.0D	RFI1019 V25.0	RFI1020 V19.0	RFI1020 V25.0	RFI1021 V19.0	RFI1021 V25.0	NMED Soil Screening Levels				EPA Regional Soil Screening Levels			
	Sample Depth (ft)	19	25	19	25	19	25	19	25	19	25	19	29	25	19	25	19	25	Residential Soil (mg/kg)	Industrial/ Occupational Soil (mg/kg)	Construction Worker Soil (mg/kg)	Risk-based SSL for a DAF of 1 (mg/kg)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Groundwater Protection Risk-based (mg/kg)	Groundwater Protection MCL-based (mg/kg)
	Sample Date	7/26/1994	7/26/1994	7/26/1994	7/26/1994	7/26/1994	7/26/1994	7/26/1994	7/26/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994	7/27/1994								
Metals																										
Arsenic	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	3.9E+00	1.8E+01	5.3E+01	1.3E-02	6.1E-01	2.4E+00	1.3E-03	2.90E-01
Barium	mg/kg	**370**	**1100**	**360**	190	**310**	**340**	**420**	**610**	**410**	**690**	**400**	**370**	**630**	**400**	**360**	**520**	**680**	1.6E+04	2.2E+05	4.4E+03	3.0E+02	1.5E+04	1.9E+05	1.2E+02	8.20E+01
Beryllium	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	1.6E+02	2.3E+03	1.4E+02	5.8E+01	1.6E+02	2.0E+03	1.3E+01	3.20E+00
Cadmium	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	7.0E+01	9.0E+02	2.8E+02	1.4E+00	NA	NA	5.2E-01	3.80E-01
Chromium	mg/kg	8.2	9.1	14	8	10	14	8.2	12	7.6	8.4	12	8.5	8.9	11	14	13	9.4	1.2E+05	1.7E+06	4.6E+05	9.9E+07	1.2E+05	1.5E+06	2.8E+07	NA
Lead	mg/kg	15	11	17	14	19	16	17	15	14	17	19	17	20	16	20	19	20	4.0E+02	8.0E+02	8.0E+02	NA	4.0E+02	8.0E+02		1.40E+01
Mercury	mg/kg	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.6E+01	7.4E+01	1.4E+01	3.3E-02	1.0E+01	4.3E+01	3.3E-02	1.00E-01
Nickel	mg/kg	17	18	18	18	19	20	19	18	17	15	16	13	17	16	19	16	17	1.6E+03	2.3E+04	6.2E+03	4.8E+01	1.5E+03	2.0E+04	2.0E+01	NA
Vanadium	mg/kg	4.1	5.3	5.2	4.8	<2.5	4.6	3.4	9.5	4.4	4.0	5.5	<2.5	3.3	4.3	5.0	6.8	4.7	3.9E+02	5.7E+03	1.5E+03	1.8E+02	3.9E+02	5.1E+03	6.3E+01	NA
8240/8260 Skinner List																										
1,2-Dibromoethane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.9E-01	3.2E+00	1.6E+01	1.5E-05	3.4E-02	1.7E-01	1.8E-06	1.40E-05
1,4-Dichloroethane	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.9E+00	4.4E+01	5.9E+01	3.6E-04	4.3E-01	2.2E+00	4.2E-05	1.40E-03
1,4-Dioxane	mg/kg	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	4.9E+01	1.9E+02	1.7E+03	1.2E-03	4.9E+00	1.7E+01	1.4E-04	NA
2-butanone (MEK)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.7E+04	3.7E+05	8.4E+04	1.3E+00	2.8E+04	2.0E+05	1.0E+00	NA
2-Chloroethylvinyl ether	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5E+01	8.5E+01	1.4E+02	1.7E-03	1.1E+00	5.4E+00	2.0E-04	2.60E-03
Carbon Disulfide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5E+03	8.3E+03	1.6E+03	2.8E-01	8.2E+02	3.7E+03	2.1E-01	
Chlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.8E+02	2.1E+03	4.1E+02	4.9E-02	2.9E+02	1.4E+03	4.9E-02	6.80E-02
Ethylbenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.8E+01	3.8E+02	1.8E+03	1.3E-02	5.4E+00	2.7E+01	1.5E-03	7.80E-01
Styrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.3E+03	5.0E+04	1.0E+04	1.4E+00	6.3E+03	3.6E+04	1.2E+00	1.10E-01
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.3E+03	5.8E+04	1.3E+04	1.3E+00	5.0E+03	4.5E+04	5.9E-01	6.90E-01
Xylenes	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.1E+02	4.0E+03	7.4E+02	1.6E-01	6.3E+02	2.7E+03	1.9E-01	9.80E+00
8270 Skinner List																										
1,2-Dichlorobenzene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.3E+03	1.4E+04	2.7E+03	2.8E-01	1.9E+03	9.8E+03	2.7E-01	5.80E-01
1,3-Dichlorobenzene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3.2E+01	1.8E+02	8.3E+02	3.2E-03	2.4E+00	1.2E+01	4.0E-04	7.20E-02
2,4-Dimethylphenol	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.2E+03	1.4E+04	4.8E+03	6.7E-01	1.2E+03	1.2E+04	3.2E-01	NA
2,4-Dinitrophenol	mg/kg	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	1.2E+02	1.4E+03	4.8E+02	6.3E-02	1.2E+02	1.2E+03	3.4E-02	NA
7,12-Dimethylbenz(a)anthracene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	4.3E-04	6.2E-03	8.5E-05	NA
1 -Methylnaphthalene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.6E+01	5.3E+01	5.1E-03	NA
3-Methylphenol	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.1E+03	6.2E+04	1.1E+00	NA
4-Methylphenol	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.1E+03	6.2E+04	NA	1.1E+00
4-Nitrophenol	mg/kg	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.7E+04	1.8E+05	6.7E+04	2.7E+02	1.7E+04	1.7E+05	4.2E+01	NA
Benzo(a)anthracene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.5E+00	2.3E+01	2.1E+02	7.8E-02	1.5E-01	2.1E+00	1.0E-02	NA
Benzo(a)pyrene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.5E-01	2.3E+00	2.1E+01	2.6E-02	1.5E-02	2.1E-01	3.5E-03	2.40E-01
Benzo(b)flouranthene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.5E+00	2.3E+01	2.1E+02	2.7E-01	1.5E-01	2.1E+00	3.5E-02	NA
Benzo(k)flouranthene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.5E+01	2.3E+02	2.1E+03	2.6E+00	1.5E+00	2.1E+01	3.5E-01	NA
Bis(2-ethylhexyl)phthalate	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3.5E+02	1.4E+03	4.8E+03	8.6E+00	3.5E+01	1.2E+02	1.1E+00	1.40E+00
Butyl benzyl phthalate	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.6E+02	9.1E+02	2.0E-01	NA
Chrysene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.5E+02	2.3E+03	2.1E+04	8.0E+00	1.5E+01	2.1E+02	1.1E+00	NA
Dibenz(a,j)acridine	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.5E-01	2.3E+00	2.1E+01	8.5E-02	1.5E-02	2.1E-01	1.1E-02	NA
Diethyl phthalate	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	4.9E+04	5.5E+05	1.9E+05	9.7E+00	4.9E+04	4.9E+05	4.7E+00	NA
Dimethyl phthalate	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.1E+05	6.8E+06	2.4E+06	8.1E+01	NA	NA	NA	NA
Di-n-butyl phthalate	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**13**	<5.0	<5.0	<5.0	**11**	<5.0	<5.0	**11**	**11**	6.1E+03	6.8E+04	2.4E+04	7.0E+00	6.1E+03	6.2E+04	1.7E+00	NA
Di-n-octyl phalate	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.1E+02	6.2E+03	4.4E+01	NA
Flouranthene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.3E+03	2.4E+04	8.9E+03	1.2E+02	2.3E+03	2.2E+04	7.0E+01	NA
Indene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Methylchrysene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	4.3E+01	2.4E+02	1.6E+02	3.6E-03	3.6E+00	1.8E+01	4.7E-04	NA
Phenanthrene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.8E+03	2.1E+04	7.1E+03	2.9E+01	NA	NA	NA	NA
Phenol	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.8E+04	2.1E+05	6.9E+04	5.0E+00	1.8E+04	1.8E+05	2.6	NA
Pyrene	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.7E+03	1.8E+04	6.7E+03	8.9E+01	1.7E+03	1.7E+04	9.5E+00	NA
Pyridine	mg/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	NA	NA	NA	NA	7.8E+01	1.0E+03	5.3E-03	NA
Quinoline	mg/kg	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	NA	N	NA	NA	1.6E-01	5.7E-01	6.8E-05	NA
Benzenethiol	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	N	NA	NA	7.8E+01	1.0E+03	8.6E-03	NA

Bolded Value - concentration exceeds screening level
NA - Screening level not available or not analyzed
DAF - Dilution attentuation factor
NMED Screening levels (June 2012)
EPA Regional Screening Levels (Nov. 2012)

TABLE 3
SWMU 10 SOIL BORING SAMPLES - VAPOR SCREENING RESULTS
WESTERN REFINING COMPANY SOUTHWEST INC. - GALLUP REFINERY
GALLUP, NEW MEXICO

Sample Interval Depth (ftbgl)	SWMU 10-1	SWMU 10-2	SWMU 10-3	SWMU 10-4	SWMU 10-5	SWMU 10-6	SWMU 10-7	SWMU 10-8	SWMU 10-9
0 - 2	14.8	10.5	12.9	40.5	108	2.7	6.2	12.9	18
2 - 4	25.7	8.0	24.2	335	61	4.3	9.5	1489	19.1
4 - 6	30.9		16.7	36.8	445	4.7	10.6	400	380
6 - 8	26.6		18.9	42.7	330	2.9	9.7	22.9	27
8 - 10	20.7		17.6	37.8	30.6	3.2	9.1	22.8	28.9
10 - 12	17.4		13.7	25.6	26.3	4.1	4.2	24.6	10.7
12 - 14	9.2		11.2	31.1	3.5		8.1	12.1	4
14 - 16	11.3		7.6	32.9	75.2		8.9	10.2	8.9
16 - 18	5.3		7.2	14.1	9.4		8.2	5.7	6.4
18 - 20	3.6		2.5	3.8	26.8		2.7		6.2
20 - 22					16.5				
22 - 24					10.7				

Sample Interval Depth (ftbgl)	SWMU 10-10	SWMU 10-11	SWMU 10-12	SWMU 10-13	SWMU 10-14	SWMU 10-15	SWMU 10-16	SWMU 10-17	SWMU 10-18
0 - 2	11.9	13.1	3.0	4.4	3.2	11.4	10.4	3.8	6.6
2 - 4	18.4	4.0	5.4	5.6	No recovery	11.1	4.9	4.1	6.2
4 - 6	1685	524	6.0	775	10.1	13.9	4.4	292	8.9
6 - 8	1514	133	4.5	1055	900	12.4	8.4	1667	18.4
8 - 10	686	570	6.1	721	23.7	12.3	0.5		20.6
10 - 12	655	8.5	6.9/6.1	11	15.9	10.7	6.8		14.1
12 - 14	75	69.2	4.9	10.3	22.4	8.9			12.9
14 - 16	18	20.6	2.9	10.4	16.9	8.4			9.3
16 - 18	16.8	7.2	1.8	12.4	7.9	8.3			10.1
18 - 20	8.5	13.4	1.2	14.1	5.2	7.1			8.7
20 - 22			1.5		6.1 (1)				
22 - 24					1.8 (2)				

Sample Interval Depth (ftbgl)	SWMU 10-19	SWMU 10-20	SWMU 10-21	SWMU 10-22	SWMU 10-23	SWMU 10-24	SWMU 10-25
0 - 2	3.5	1.3	1.5	5.6	0	2.4	1.9
2 - 4	1.5	0.7	17.0	2	0.2	2.5	1319
4 - 6	2.4	1	16.7	4.1	0.2	1.1	187
6 - 8	8.2	1436	7.2	6.9	2	3000	108
8 - 10	12.6	1603	9.6	7.2	3.3	2021	201
10 - 12	12.8	1715	5.3		3.7	307	367
12 - 14	900	376	12.1		3.5	443	350
14 - 16	291	77	Sat		2.5	123	0.6
16 - 18	233	1022	Sat		1.4	80	5
18 - 20	30.1	72	6.1				5
20 - 22			2.7				
22 - 24							

(1) 20 - 21 feet
(2) 21 - 23 feet
ftbgl - feet below ground level

TABLE 4
Groundwater Field Mesurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

WELL	DATE	DEPTH TO GROUNDWATER (ft) [2]	TEMPERATURE °C	SPECIFIC CONDUCTIVITY (uS/cm)	DISSOLVED OXYGEN (mg/L)	pH	OXYGEN REDUCTION POTENTIAL
SWMU 10-1	04/29/15	7.12	14.4	12186	6.74	7.1	333.8
SWMU 10-3	04/29/15	11.05	13.7	NM [1]	7.9	7.15	358
SWMU 10-5	05/04/15	11.91	12.4	10462	5.88	7.01	434
SWMU 10-11	05/14/15	3.35	12.1	7288	7.21	6.95	251.6
SWMU 10-12	05/14/15	3.38	12.2	2950	3.48	7.23	288.1
SWMU 10-14	05/14/15	12.50	11.2	2994	8.27	7.14	358.9
SWMU 10-15	05/14/15	4.31	12.7	8119	8.85	6.86	352.3
SWMU 10-16	05/14/15	6.20	NM [3]	NM [3]	NM [3]	NM [3]	NM [3]
SWMU 10-20	05/19/16	10.90	13	4985	7.58	7.46	148.6
SWMU 10-21	05/19/16	19.35	NM [3]	NM [3]	NM [3]	NM [3]	NM [3]
SWMU 10-25	09/21/16	8.74	15.9	6665	5.32	7.04	127.2

(1) Recorded data was 78.6 and is considered to be an error.
(2) Depth to groundwater estimated from land surface
(3) Not Measured - very low yielding well, used all available water for sample collection

TABLE 5
Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED Residential (0-10')	endpoint	EPA Residential (0-2')	endpoint	NMED IndOccSoil (0-1')	NMED IndOccSoil_Endpoint	NMED ConsWork Soil (0-10')	NMED ConsWork Soil_Endpoint	EPA Industrial Soil (0-2')	EPA IndSoil_keX	NMED DAF1 SoilGW	EPA GW_Risk-based SSL_SoilGW	EPA GW_MCL-based SSL_SoilGW
Metals (mg/kg)													
Antimony	3.13E+01	n	3.10E+01	n	5.19E+02	n	1.42E+02	n	4.70E+02	n	3.28E-01	3.50E-01	2.70E-01
Arsenic	4.25E+00	c	6.80E-01	c*	2.15E+01	c	5.74E+01	n	3.00E+00	c	1.50E-02	1.50E-03	2.90E-01
Barium	1.56E+04	n	1.50E+04	n	2.55E+05	nl	4.35E+03	n	2.20E+05	nm	1.35E+02	1.60E+02	8.20E+01
Beryllium	1.56E+02	n	1.60E+02	n	2.58E+03	n	1.48E+02	n	2.30E+03	n	9.79E+00	1.90E+01	3.20E+00
Cadmium	7.05E+01	n	7.10E+01	n	1.11E+03	n	7.21E+01	n	9.80E+02	n	4.69E-01	6.90E-01	3.80E-01
Chromium	9.66E+01	c	-	-	5.05E+02	c	1.34E+02	n	-	-	1.01E+04	-	1.80E+05
Hexavalent Chromium	3.05E+00	c	3.00E-01	n	7.21E+01	n	6.69E+01	c	6.30E+00	nm	4.84E-03	6.70E-04	-
Cobalt	-	-	2.30E+01	n	-	-	-	-	3.50E+02	n	-	2.70E-01	-
Cyanide	1.12E+01	n	2.70E+00	n	6.33E+01	n	1.21E+01	n	1.20E+01	n	2.61E-04	1.50E-02	2.00E+00
Iron	-	-	5.50E+04	n	-	-	-	-	8.20E+05	n	-	3.50E+02	
Lead	4.00E+02	IEUBK	4.00E+02	nL	8.00E+02	IEUBK	8.00E+02	IEUBK	8.00E+02	nL	-	-	1.40E+01
Manganese	-	-	1.80E+03	n	-	-	-	-	2.60E+04	n	-	2.80E+01	
Mercury	2.38E+01	ns	9.40E+00	ns	1.12E+02	ns	2.07E+01	ns	4.00E+01	ns	3.27E-02	3.30E-02	1.00E-01
Nickel	1.56E+03	n	8.40E+02	c	2.57E+04	n	6.19E+03	n	1.20E+04	c	2.42E+01	-	-
Selenium	3.91E+02	n	3.90E+02	n	6.49E+03	n	1.75E+03	n	5.80E+03	n	5.11E-01	5.20E-01	2.60E-01
Silver	3.91E+02	n	3.90E+02	n	6.49E+03	n	1.77E+03	n	5.80E+03	n	6.88E-01	8.00E-01	-
Vanadium	3.94E+02	n	3.90E+02	n	6.53E+03	n	6.14E+02	n	5.80E+03	n	6.31E+01	8.60E+01	-
Zinc	2.35E+04	n	2.30E+04	n	3.89E+05	nl	1.06E+05	n	3.50E+05	nm	3.71E+02	3.70E+02	-
Volatiles (mg/kg)													
1,1,1,2-Tetrachloroethane	2.81E+01	c	2.00E+00	c	1.37E+02	c	7.79E+02	cs	8.80E+00	cs	1.80E-03	2.20E-04	-
1,1,1-Trichloroethane	1.44E+04	ns	8.10E+03	ns	7.25E+04	ns	1.36E+04	ns	3.60E+04	ns	2.55E+00	2.80E+00	7.00E-02
1,1,2,2-Tetrachloroethane	7.98E+00	c	6.00E-01	c	3.94E+01	c	1.97E+02	c	2.70E+00	c	2.40E-04	2.80E-05	-
1,1,2-Trichloroethane	2.61E+00	n	1.10E+00	c	1.24E+01	c	2.30E+00	ns	5.00E+00	c	1.11E-04	8.90E-05	1.60E-03
1,1-Dichloroethane	7.86E+01	c	3.60E+00	c	3.83E+02	c	1.82E+03	cs	1.60E+01	c	6.79E-03	7.80E-04	-
1,1-Dichloroethene	4.40E+02	n	2.30E+02	n	2.26E+03	ns	4.24E+02	ns	1.00E+03	n	9.74E-02	1.00E-01	2.50E-03
1,1-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	-	-	6.30E+01	n	-	-	-	-	9.30E+02	n	-	2.10E-02	-
1,2,3-Trichloropropane	5.10E-02	c	5.10E-03	c	1.21E+00	c	6.31E+00	c	1.10E-01	c	2.60E-06	3.20E-07	-
1,2,4-Trichlorobenzene	8.29E+01	n	2.40E+01	n	4.23E+02	ns	7.91E+01	ns	1.10E+02	ns	8.82E-03	3.30E-03	2.00E-01
1,2,4-Trimethylbenzene	-	-	5.80E+01	n	-	-	-	-	2.40E+02	ns	-	2.10E-02	-
1,2-Dibromo-3-chloropropane	8.58E-02	c	5.30E-03	c	1.18E+00	c	5.53E+00	c	6.40E-02	c	1.17E-06	1.44E-07	8.60E-05
1,2-Dibromoethane (EDB)	6.72E-01	c	3.60E-02	c	3.31E+00	c	1.63E+01	c	1.60E-01	c	1.76E-05	2.10E-06	1.40E-05
1,2-Dichlorobenzene	2.15E+03	ns	1.80E+03	ns	1.30E+04	ns	2.50E+03	ns	9.30E+03	ns	2.29E-01	3.00E-01	5.80E-01
1,2-Dichloroethane (EDC)	8.32E+00	c	4.60E-01	c	4.07E+01	c	5.38E+01	n	2.00E+00	c	4.07E-04	4.80E-05	1.40E-03
1,2-Dichloropropane	1.78E+01	c	1.00E+00	c*	8.68E+01	c	2.54E+01	n	4.70E+00	c*	1.21E-03	1.50E-04	1.70E-03
1,3,5-Trimethylbenzene	-	-	7.80E+02	n	-	-	-	-	1.20E+04	n	-	1.70E-01	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 5
Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED Residential (0-10')	endpoint	EPA Residential (0-2')	endpoint	NMED IndOccSoil (0-1')	NMED IndOccSoil_Endpoint	NMED ConsWork Soil (0-10')	NMED ConsWork Soil_Endpoint	EPA Industrial Soil (0-2')	EPA IndSoil_keX	NMED DAF1 SoilGW	EPA GW_Risk-based SSL_SoilGW	EPA GW_MCL-based SSL_SoilGW
1,3-Dichloropropane	-	-	1.60E+03	n	-	-	-	-	2.30E+04	ns	-	1.30E-01	-
1,4-Dichlorobenzene	3.28E+01	c	2.60E+00	c	1.59E+02	c	7.46E+02	cs	1.10E+01	c	3.60E-03	4.60E-04	7.20E-02
1-Methylnaphthalene	-	-	1.80E+01	c	-	-	-	-	7.30E+01	c	-	5.80E-03	-
2,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	3.74E+04	n	2.70E+04	ns	4.11E+05	nls	9.17E+04	nls	1.90E+05	nms	1.00E+00	1.20E+00	-
2-Chlorotoluene	1.56E+03	ns	1.60E+03	ns	2.60E+04	ns	7.08E+03	ns	2.30E+04	ns	1.78E-01	2.30E-01	-
2-Hexanone	-	-	2.00E+02	-	-	-	-	-	1.30E+03	-	-	8.80E-03	-
2-Methylnaphthalene	-	-	2.40E+02	n	-	-	-	-	3.00E+03	ns	-	1.90E-01	-
4-Chlorotoluene	-	-	1.60E+03	ns	-	-	-	-	2.30E+04	ns	-	2.40E-01	-
4-Isopropyltoluene	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone	5.81E+03	ns	-	-	8.16E+04	ns	2.02E+04	ns	-	-	2.40E-01	-	-
Acetone	6.63E+04	n	6.10E+04	n	9.60E+05	nls	2.42E+05	nls	6.70E+05	nms	2.49E+00	2.90E+00	-
Benzene	1.78E+01	c	1.20E+00	c*	8.72E+01	c	1.42E+02	n	5.10E+00	c*	1.90E-03	2.30E-04	2.60E-03
Bromobenzene	-	-	2.90E+02	n	-	-	-	-	1.80E+03	n	-	4.20E-02	-
Bromodichloromethane	6.19E+00	c	2.90E-01	c	3.02E+01	c	1.43E+02	c	1.30E+00	c	3.10E-04	3.60E-05	-
Bromoform	6.74E+02	c	1.90E+01	c*	3.25E+03	c	5.38E+03	n	8.60E+01	c*	2.05E-02	8.70E-04	-
Bromomethane	1.77E+01	n	6.80E+00	n	9.45E+01	n	1.79E+01	n	3.00E+01	n	1.71E-03	1.90E-03	-
Carbon disulfide	1.55E+03	ns	7.70E+02	ns	8.54E+03	ns	1.62E+03	ns	3.50E+03	ns	2.21E-01	2.40E-01	-
Carbon tetrachloride	1.07E+01	c	6.50E-01	c	5.25E+01	c	2.02E+02	ns	2.90E+00	c	1.66E-03	1.80E-04	1.90E-03
Chlorobenzene	3.78E+02	ns	2.80E+02	n	2.16E+03	ns	4.12E+02	ns	1.30E+03	ns	4.18E-02	5.30E-02	6.80E-02
Chloroethane	1.90E+04	ns	1.40E+04	ns	8.95E+04	nls	1.66E+04	nls	5.70E+04	ns	5.37E+00	5.90E+00	-
Chloroform	5.90E+00	c	3.20E-01	c	2.87E+01	c	1.34E+02	c	1.40E+00	c	5.46E-04	6.10E-05	-
Chloromethane	4.11E+01	n	1.10E+02	n	2.01E+02	cs	2.35E+02	n	4.60E+02	n	4.76E-03	4.90E-02	-
cis-1,2-DCE	1.56E+02	n	1.60E+02	n	2.60E+03	ns	7.08E+02	c	2.30E+03	ns	9.18E-03	1.10E-02	2.10E-02
cis-1,3-Dichloropropene	2.93E+01	c	1.80E+00	c*	1.46E+02	c	1.30E+02	ns	8.20E+00	c*	1.40E-03	1.70E-04	-
Dibromochloromethane	1.39E+01	c	7.50E-01	c	6.74E+01	c	3.40E+02	cs	3.30E+00	c	3.77E-04	4.50E-05	2.10E-02
Dibromomethane	-	-	2.30E+01	n	-	-	-	-	9.80E+01	ns	-	2.00E-03	-
Dichlorodifluoromethane	1.82E+02	n	8.70E+01	n	8.65E+02	ns	1.61E+02	ns	3.70E+02	n	3.61E-01	3.00E-01	-
Ethylbenzene	7.51E+01	c	5.80E+00	c	3.68E+02	cs	1.77E+03	cs	2.50E+01	c	1.31E-02	1.70E-03	7.80E-01
Hexachlorobutadiene	6.16E+01	n	1.20E+00	c**	3.29E+02	c	2.69E+02	n	5.30E+00	c*	4.39E-03	2.60E-04	-
Isopropylbenzene	2.36E+03	ns	1.90E+03	ns	1.42E+04	ns	2.74E+03	ns	9.90E+03	ns	5.69E-01	7.40E-01	-
Methyl tert-butyl ether (MTBE)	9.75E+02	c	4.70E+01	c	4.82E+03	c	2.42E+04	cs	2.10E+02	c	2.77E-02	3.20E-03	-
Methylene chloride	4.09E+02	n	5.70E+01	c	5.13E+03	c	1.21E+03	ns	1.00E+03	c	2.35E-02	2.91E-03	1.30E-03
Naphthalene	4.97E+01	c	3.80E+00	c*	2.41E+02	c	1.59E+02	n	1.70E+01	c*	4.11E-03	5.40E-04	-
n-Butylbenzene	-	-	3.90E+03	ns	-	-	-	-	5.80E+04	ns	-	3.20E+00	-
n-Propylbenzene	-	-	3.80E+03	ns	-	-	-	-	2.40E+04	ns	-	1.20E+00	-
sec-Butylbenzene	-	-	7.80E+03	ns	-	-	-	-	1.20E+05	nms	-	5.90E+00	-
Styrene	7.26E+03	ns	6.00E+03	ns	5.13E+04	ns	1.02E+04	ns	3.50E+04	ns	1.03E+00	1.30E+00	1.10E-01

TABLE 5
Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED Residential (0-10')	endpoint	EPA Residential (0-2')	endpoint	NMED IndOccSoil (0-1')	NMED IndOccSoil_Endpoint	NMED ConsWork Soil (0-10')	NMED ConsWork Soil_Endpoint	EPA Industrial Soil (0-2')	EPA IndSoil_keX	NMED DAF1 SoilGW	EPA GW_Risk-based SSL_SoilGW	EPA GW_MCL-based SSL_SoilGW
tert-Butylbenzene	-	-	7.80E+03	ns	-	-	-	-	1.20E+05	nms	-	1.60E+00	-
Tetrachloroethene (PCE)	1.11E+02	c	2.40E+01	c**	6.29E+02	c	1.20E+02	cs	1.00E+02	c**	1.60E-02	5.10E-03	2.30E-03
Toluene	5.23E+03	ns	4.90E+03	ns	6.13E+04	ns	1.40E+04	ns	4.70E+04	ns	6.07E-01	7.60E-01	6.90E-01
trans-1,2-DCE	2.95E+02	n	1.60E+03	n	1.61E+03	ns	3.05E+02	ns	2.30E+04	ns	2.35E-02	1.10E-01	3.10E-02
trans-1,3-Dichloropropene	2.93E+01	c	1.80E+00	c*	1.46E+02	c	1.30E+02	ns	8.20E+00	c*	1.40E-03	1.70E-04	-
Trichloroethene (TCE)	6.77E+00	n	9.40E-01	c**	3.65E+01	c	6.90E+00	cs	6.00E+00	c**	8.75E-04	1.80E-04	1.80E-03
Trichlorofluoromethane	1.23E+03	ns	7.30E+02	n	6.03E+03	ns	1.13E+03	ns	3.10E+03	ns	7.84E-01	7.30E-01	-
Vinyl chloride	7.42E-01	c	5.90E-02	c	2.84E+01	c	1.61E+02	c	1.70E+00	c	6.75E-05	6.50E-06	6.90E-04
Xylenes, Total	8.71E+02	ns	5.50E+02	ns	4.28E+03	ns	7.98E+02	ns	2.40E+03	ns	1.49E-01	1.90E-01	
Semi-volatiles (mg/kg)													
1,2,4-Trichlorobenzene	8.29E+01	n	2.40E+01	c**	4.23E+02	ns	7.91E+01	ns	1.10E+02	c**	8.82E-03	3.30E-03	2.00E-01
1,2-Dichlorobenzene	2.15E+03	ns	1.80E+03	ns	1.30E+04	ns	2.50E+03	ns	9.30E+03	ns	2.29E-01	3.00E-01	5.80E-01
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	3.28E+01	c	2.60E+00	c	1.59E+02	c	7.46E+02	cs	1.10E+01	c	3.60E-03	4.60E-04	7.20E-02
1-Methylnaphthalene	-	-	1.80E+01	c	-	-	-	-	7.30E+01	c	-	5.80E-03	-
2,4,5-Trichlorophenol	6.16E+03	n	6.30E+03	n	9.16E+04	n	2.69E+04	n	8.20E+04	n	3.31E+00	4.40E+00	-
2,4,6-Trichlorophenol	6.16E+01	n	4.90E+01	c**	9.16E+02	n	2.69E+02	n	2.10E+02	c**	3.37E-02	1.50E-02	-
2,4-Dichlorophenol	1.85E+02	n	1.90E+02	n	2.75E+03	n	8.07E+02	n	2.50E+03	n	4.13E-02	5.40E-02	-
2,4-Dimethylphenol	1.23E+03	n	1.30E+03	n	1.83E+04	n	5.38E+03	n	1.60E+04	n	3.22E-01	4.20E-01	-
2,4-Dinitrophenol	1.23E+02	n	1.30E+02	n	1.83E+03	n	5.38E+02	n	1.60E+03	n	3.35E-02	4.40E-02	-
2,4-Dinitrotoluene	1.71E+01	c	1.70E+00	c*	8.23E+01	c	5.36E+02	n	7.40E+00	c	2.46E-03	3.20E-04	-
2,6-Dinitrotoluene	3.56E+00	n	3.60E-01	c*	1.72E+01	n	8.09E+01	n	1.50E+00	c	5.10E-04	6.70E-05	-
2-Chloronaphthalene	6.26E+03	ns	4.80E+03	n	1.04E+05	ns	2.83E+04	ns	6.00E+04	n	2.85E+00	3.80E+00	-
2-Chlorophenol	3.91E+02	n	3.90E+02	n	6.49E+03	n	1.77E+03	n	5.80E+03	n	5.76E-02	7.40E-02	-
2-Methylnaphthalene	-	-	2.40E+02	n	-	-	-	-	3.00E+03	n	-	1.90E-01	-
'2-Methylphenol (cresol,o-)	-	-	3.20E+03	n	-	-	-	-	4.10E+04	n	-	7.50E-01	-
2-Nitroaniline	-	-	6.30E+02	n	-	-	-	-	8.00E+03	n	-	8.00E-02	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3´-Dichlorobenzidine	1.18E+01	c	1.20E+00	c	5.70E+01	c	4.10E+02	c	5.10E+00	c	6.14E-03	8.10E-04	-
3+4-Methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	4.93E+00	n	-	-	7.33E+01	n	2.15E+01	n	-	-	1.97E-03	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	-	-	2.70E+00	c*	-	-	-	-	1.10E+01	c	-	1.60E-04	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	2.70E+01	c**	-	-	-	-	1.10E+02	c*	-	1.60E-03	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 5
Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED Residential (0-10')	endpoint	EPA Residential (0-2')	endpoint	NMED IndOccSoil (0-1')	NMED IndOccSoil_Endpoint	NMED ConsWork Soil (0-10')	NMED ConsWork Soil_Endpoint	EPA Industrial Soil (0-2')	EPA IndSoil_keX	NMED DAF1 SoilGW	EPA GW_Risk-based SSL_SoilGW	EPA GW_MCL-based SSL_SoilGW
Acenaphthene	3.48E+03	n	3.60E+03	n	5.05E+04	n	1.51E+04	n	4.50E+04	n	4.12E+00	5.50E+00	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	-	-
Aniline	-	-	9.50E+01	c**	-	-	-	-	4.00E+02	c*	-	4.60E-03	-
Anthracene	1.74E+04	n	1.80E+04	n	2.53E+05	nl	7.53E+04	n	2.30E+05	nm	4.25E+01	5.80E+01	-
Azobenzene	-	-	5.60E+00	c	-	-	-	-	2.60E+01	c	-	9.20E+04	-
Benz(a)anthracene	1.53E+00	c	1.60E-01	c	3.23E+01	c	2.40E+02	c	2.90E+00	c	9.11E-02	4.30E-03	-
Benzo(a)pyrene	1.53E-01	c	1.60E-02	c	3.23E+00	c	2.40E+01	c	2.90E-01	c	3.02E-02	4.00E-03	2.40E-01
Benzo(b)fluoranthene	1.53E+00	c	1.60E-01	c	3.23E+01	c	2.40E+02	c	2.90E+00	c	3.09E-01	4.10E-02	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	1.53E+01	c	1.60E+00	c	3.23E+02	c	2.31E+03	c	2.90E+01	c	3.02E+00	4.00E-01	-
Benzoic acid	-	-	2.50E+05	nm	-	-	-	-	3.30E+06	nm	-	1.80E+01	-
Benzyl alcohol	-	-	6.30E+03	n	-	-	-	-	8.20E+04	nm	-	4.80E-01	-
Bis(2-chloroethoxy)methane	-	-	1.90E+02	n	-	-	-	-	2.50E+03	n	-	1.30E-02	-
Bis(2-chloroethyl)ether	3.11E+00	c	2.30E-01	c	1.57E+01	c	1.95E+00	c	1.00E+00	c	3.03E-05	3.60E-06	-
Bis(2-chloroisopropyl)ether	9.93E+01	c	-	-	5.19E+02	cs	3.54E+03	cs	-	-	2.37E-03	-	-
Bis(2-ethylhexyl)phthalate	3.80E+02	cs	3.90E+01	c*	1.83E+03	cs	5.38E+03	n	1.60E+02	c	9.99E+00	1.30E+00	1.40E+00
Butyl benzyl phthalate	-	-	2.90E+02	c*	-	-	-	-	1.20E+03	c	-	2.30E-01	-
Carbazole	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	1.53E+02	c	1.60E+01	c	3.23E+03	c	2.31E+04	c	2.90E+02	c	9.30E+00	1.20E+00	-
Dibenz(a,h)anthracene	1.53E-01	c	1.60E-02	c	3.23E+00	c	2.40E+01	c	2.90E-01	c	3.05E-01	1.30E-02	-
Dibenzofuran	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	4.93E+04	n	5.10E+04	n	7.33E+05	nl	2.15E+05	nl	6.60E+05	nm	4.89E+00	6.10E+00	-
Dimethyl phthalate	6.11E+05	nl	-	-	6.84E+06	nl	2.38E+06	nl	-	-	8.06E+01	-	-
Di-n-butyl phthalate	6.16E+03	n	-	-	9.16E+04	n	2.69E+04	n	-	-	1.69E+00	-	-
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	2.32E+03	n	2.40E+03	n	3.37E+04	n	1.00E+04	n	3.00E+04	n	6.69E+01	8.90E+01	-
Fluorene	2.32E+03	n	2.40E+03	n	3.37E+04	ns	1.00E+04	ns	3.00E+04	n	4.00E+00	5.40E+00	-
Hexachlorobenzene	3.33E+00	c	2.10E-01	c	1.60E+01	c	1.17E+02	c	9.60E-01	c	4.61E-03	1.20E-04	1.30E-02
Hexachlorobutadiene	6.16E+01	n	1.20E+00	c*	3.29E+02	c	2.69E+02	n	5.30E+00	c	4.39E-03	2.60E-04	-
Hexachlorocyclopentadiene	3.70E+02	n	1.80E+00	n	5.49E+03	n	8.67E+02	n	7.50E+00	n	6.68E-02	1.30E-03	1.60E-01
Hexachloroethane	4.31E+01	n	1.80E+00	c*	6.41E+02	n	1.88E+02	n	8.00E+00	c*	3.31E-03	2.00E-04	-
Indeno(1,2,3-cd)pyrene	1.53E+00	c	1.60E-01	c	3.23E+01	c	2.40E+02	c	2.90E+00	c	1.00E+00	1.30E-01	-
Isophorone	5.61E+03	c	5.70E+02	c*	2.70E+04	cs	5.37E+04	n	2.40E+03	c*	2.11E-01	2.60E-02	-
Naphthalene	4.97E+01	c	3.80E+00	c*	2.41E+02	c	1.59E+02	n	1.70E+01	c*	4.11E-03	5.40E-04	-
Nitrobenzene	6.04E+01	c	5.10E+00	c*	2.93E+02	c	3.53E+02	n	2.20E+01	c*	7.20E-04	9.20E-05	-
N-Nitrosodi-n-propylamine	-	-	7.80E-02	c	-	-	-	-	3.30E-01	c	-	8.10E-06	-
N-Nitrosodiphenylamine	7.94E-03	c	1.10E+02	c	1.71E-01	c	1.25E+00	c	4.70E+02	c	4.92E-07	6.60E-02	-
Pentachlorophenol	9.85E+00	c	1.00E+00	c	4.45E+01	c	3.46E+02	c	4.00E+00	c	3.04E-03	4.00E-04	1.00E-02

TABLE 5
Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED Residential (0-10')	endpoint	EPA Residential (0-2')	endpoint	NMED IndOccSoil (0-1')	NMED IndOccSoil_Endpoint	NMED ConsWork Soil (0-10')	NMED ConsWork Soil_Endpoint	EPA Industrial Soil (0-2')	EPA IndSoil_keX	NMED DAF1 SoilGW	EPA GW_Risk-based SSL_SoilGW	EPA GW_MCL-based SSL_SoilGW
Phenanthrene	1.74E+03	ns	-	-	2.53E+04	n	7.53E+03	n	-	-	4.30E+00	-	-
Phenol	1.83E+04	n	1.90E+04	n	2.75E+05	nl	7.74E+04	n	2.50E+05	nm	2.62E+00	3.30E+00	-
Pyrene	1.74E+03	n	1.80E+03	n	2.53E+04	n	7.53E+03	n	2.30E+04	n	9.59E+00	1.30E+01	-
Pyridine	-	-	7.80E+01	n	-	-	-	-	1.20E+03	n	-	6.80E-03	-
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	-	-	-	-	-
Diesel Range Organics (DRO)	1.00E+03	-	-	-	3.80E+03	-	-	-	-	-	-	-	-
Motor Oil Range Organics (MRO)	1.00E+03	-	-	-	3.80E+03	-	-	-	-	-	-	-	-

- No screening level or analytical result available
NMED - New Mexico Environment Department Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Environmental Protection Agency Regional Screening Levels (Nov 2015)
NMED TPH Soil Screening Levels "uknown oil"
c -carcinogen
cs - carcinogenic, SSL may exceed saturation
c* - where: n SL < 100X c SL
c** - where n SL < 10X c SL
n - noncarcinogenic
ns - noncarcinogenic, SSL may exceed saturation
nl - noncarcinogenic, SSL may exceed ceiling limit
nm - concentration may exceed ceiling limit

TABLE 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	New Mexico WQCC Standards	NMED Tap Water	NMED TapW_key	EPA Screening Levels.Tap Water	EPA TapW_key	MCL
Metals (ug/l) TOTAL						
Antimony	-	7.26	n	7.80	n	**6.00**
Arsenic	100	0.51	c	0.05	c	**10**
Barium	-	3277	n	3800	n	**2000**
Beryllium	-	12.39	n	25	n	**4**
Cadmium	-	6.24	n	9.20	n	**5**
Chromium	**50**	5.59	c	22000	n	100
Hexavalent Chromium	-	**0.25**	c	0.04	c	
Cobalt	-	-	-	**6**	n	-
Cyanide	**200**	1.46	n	1.50	n	200
Iron		**13822**	n	14000	n	-
Lead	50	-	-	15	L	**15**
Manganese		**2017.40**	n	430	n	-
Mercury	**2**	0.63	n	0.63	n	2
Nickel	-	**371.96**	n	200	n	-
Selenium	**50**	98.73	n	100	n	50
Silver	**50**	81.19	n	94	n	-
Vanadium	-	**63.07**	n	86	n	-
Zinc	**10000**	5960.45	n	6000	n	-
Chloride	**250000**	-	-	-	-	-
Fluoride	**1600**	1184.73	n	800	n	-
Sulfate	**600000**	-	-	-	-	-
Metals (ug/l) DISSOLVED						
Antimony (D)	-	7.26	n	7.80	n	**6**
Arsenic (D)	100	0.51	c	0.05	c	**10**
Barium (D)	**1000**	3277.35	n	3800	n	2000
Beryllium (D)	-	12.39	n	25	n	**4**
Cadmium (D)	10	6.24	n	9.20	n	**5**
Chromium (D)	**50**	5.59	c	22000	n	100
Cobalt (D)	**50**	-	-	6	n	-
Iron (D)	**1000**	13821.88	n	14000	n	-
Lead (D)	50	-	-	15	L	**15**
Manganese (D)	**200**	2017.40	n	430	n	-
Nickel (D)	-	**371.96**	n	200	n	-
Selenium (D)	**50**	98.73	n	100	n	50
Silver (D)	**50**	81.19	n	94	n	-
Vanadium (D)	-	**63.07**	n	86	n	-
Zinc (D)	**10000**	5960.45	n	6000	n	-
Volatiles (ug/l)						

TABLE 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	New Mexico WQCC Standards	NMED Tap Water	NMED TapW_key	EPA Screening Levels.Tap Water	EPA TapW_key	MCL
1,1,1,2-Tetrachloroethane	-	**5.72**	c	0.57	c	-
1,1,1-Trichloroethane	**60**	8002.78	n	8000	n	200
1,1,2,2-Tetrachloroethane	**10**	0.76	c	0.08	c	-
1,1,2-Trichloroethane	10	0.41	c	0.28	c**	**5**
1,1-Dichloroethane	**25**	24.18	c	2.80	c	-
1,1-Dichloroethene	**5**	339.53	n	280	n	7
1,1-Dichloropropene	-	-	-	**0.47**	c*	-
1,2,3-Trichlorobenzene	-	-	-	**7**	n	-
1,2,3-Trichloropropane	-	**0.01**	c	0.0008	c	-
1,2,4-Trichlorobenzene (V)	-	4.12	n	1.20	c**	**70**
1,2,4-Trimethylbenzene	-	-	-	**15**	n	-
1,2-Dibromo-3-chloropropane	-	0.0032	c	0.0003	c	**0.20**
1,2-Dibromoethane (EDB)	0.1	0.07	c	0.01	c	**0.05**
1,2-Dichlorobenzene (V)	-	370.14	n	300	n	**600**
1,2-Dichloroethane (EDC)	10	1.49	c	0.17	c*	**5**
1,2-Dichloropropane	-	3.86	c	0.44	c*	**5**
1,3,5-Trimethylbenzene	-	-	-	**12**	n	-
1,3-Dichlorobenzene (V)	-	-	-	-	-	-
1,3-Dichloropropane	-	-	-	**370**	n	-
1,4-Dichlorobenzene (V)	-	4.27	c	0.48	c	**75**
1-Methylnaphthalene (V)	-	-	-	**1.10**	c	-
2,2-Dichloropropane	-	-	-	-	-	-
2-Butanone	-	**5564.70**	n	5600	n	-
2-Chlorotoluene	-	-	-	**240**	n	-
2-Hexanone	-	-	-	-	-	-
2-Methylnaphthalene (V)	-	-	-	**36**	n	-
4-Chlorotoluene	-	-	-	**250**	n	-
4-Isopropyltoluene	-	-	-	-	-	-
4-Methyl-2-pentanone	-	-	-	-	-	-
Acetone	-	**14063.57**	n	14000	n	-
Benzene	10	4.13	c	0.46	c*	**5**
Bromobenzene	-	-	-	**62**	n	-
Bromodichloromethane	-	**1.34**	c	0.13	c	-
Bromoform	-	-	-	**3.30**	c*	-
Bromomethane	-	**7.54**	n	7.50	n	-
Carbon disulfide	-	**809.54**	n	810	n	-
Carbon Tetrachloride	10	4.40	c	0.46	c	**5**
Chlorobenzene	-	91.25	n	78.00	n	**100**
Chloroethane	-	**20857.14**	-	-	-	-

TABLE 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	New Mexico WQCC Standards	NMED Tap Water	NMED TapW_key	EPA Screening Levels.Tap Water	EPA TapW_key	MCL
Chloroform	**100**	1.93	c	0.22	c	-
Chloromethane	-	**20.31**	c	190.00	n	-
cis-1,2-DCE	-	73	n	36	n	**70**
cis-1,3-Dichloropropene	-	**4.70**	c	-	-	-
Dibromochloromethane	-	**1.68**	c	0.87	c	-
Dibromomethane	-	-	-	**8.30**	n	-
Dichlorodifluoromethane	-	**197.20**	n	200	n	-
Ethylbenzene	750	14.76	c	1.50	c	**700**
Hexachlorobutadiene (V)	-	**2.95**	c	0.14	c*	-
Isopropylbenzene	-	**446.85**	n	450	n	-
Methyl tert-butyl ether (MTBE)	-	**142.99**	c	14	c	-
Methylene Chloride	100	186.38	c	11	c**	**5**
Naphthalene (V)	-	**1.65**	c	0.17	c*	-
n-Butylbenzene	-	-	-	-	-	-
n-Propylbenzene	-	-	-	-	-	-
sec-Butylbenzene	-	-	-	-	-	-
Styrene	-	1622.22	n	1200	n	**100**
tert-Butylbenzene	-	-	-	-	-	-
Tetrachloroethene (PCE)	20	1.08	c	11	c**	**5**
Toluene	**750**	2281.25	n	1100	n	1000
trans-1,2-DCE	-	106.83	n	360	n	**100**
trans-1,3-Dichloropropene	-	**4.70**	c	0.47	c*	-
Trichloroethene (TCE)	100	3.40	n	0.49	c**	**5**
Trichlorofluoromethane	-	**1136.82**	n	5200	n	-
Vinyl chloride	**1**	0.16	c	0.02	c	2
Xylenes, Total	**620**	202.78	n	190	n	10000
Semivolatiles (ug/l)						
1,2,4-Trichlorobenzene	-	4.12	n	45	n	**70**
1,2-Dichlorobenzene	-	370.14	n	300	n	**600**
1,3-Dichlorobenzene	-	-	-	-	-	-
1,4-Dichlorobenzene	-	4.27	c	0.48	c	**75**
1-Methylnaphthalene	-	-	-	**1.10**	c	-
2,4,5-Trichlorophenol	-	**1165.98**	n	1200	n	-
2,4,6-Trichlorophenol	-	**11.88**	n	4.10	c**	-
2,4-Dichlorophenol	-	**45.30**	n	46	n	-
2,4-Dimethylphenol	-	**353.88**	n	360	n	-
2,4-Dinitrophenol	-	**38.79**	n	39	n	-
2,4-Dinitrotoluene	-	**2.37**	c	0.24	c	-
2,6-Dinitrotoluene	-	**0.48**	n	0.05	c	-

TABLE 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	New Mexico WQCC Standards	NMED Tap Water	NMED TapW_key	EPA Screening Levels.Tap Water	EPA TapW_key	MCL
2-Chloronaphthalene	-	**732.56**	n	750	n	-
2-Chlorophenol	-	**91**	n	91	n	-
2-Methylnaphthalene	-	-	-	**36**	n	-
2-Methylphenol	-	-	-	**930**	n	-
2-Nitroaniline	-	-	-	**190**	n	-
2-Nitrophenol	-	-	-	-	-	-
3,3´-Dichlorobenzidine	-	**1.24**	c	0.13	c	-
3+4-Methylphenol	-	-	-	**930**	n	-
3-Nitroaniline	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	**1.51**	n	-	-	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-
4-Chloroaniline	-	-	-	**0.37**	c	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-
4-Nitroaniline	-	-	-	**3.80**	c*	-
4-Nitrophenol	-	-	-	-	-	-
Acenaphthene	-	**534.60**	n	530	n	-
Acenaphthylene	-	-	-	-	-	-
Aniline	-	-	-	**13**	c*	-
Anthracene	-	**1721.28**	n		n	-
Azobenzene	-	-	-	**0.12**	c	-
Benz(a)anthracene	-	**0.34**	c	0.01	c	-
Benzo(a)pyrene	0.7	0.03	c	0.00	c	**0.20**
Benzo(b)fluoranthene	-	**0.34**	c	0.03	c	-
Benzo(g,h,i)perylene	-	-	-	-	-	-
Benzo(k)fluoranthene	-	**3.43**	c	0.34	c	-
Benzoic acid	-	-	-	**75000**	n	-
Benzyl alcohol	-	-	-	**2000**	n	-
Bis(2-chloroethoxy)methane	-	-	-	**59**	n	-
Bis(2-chloroethyl)ether	-	**9.76**	c	0.01	c	-
Bis(2-chloroisopropyl)ether	-	**9.76**	c	-	-	-
Bis(2-ethylhexyl)phthalate	-	48	c	5.60	c*	**6**
Butyl benzyl phthalate	-	-	-	**16**	c	-
Carbazole	-	-	-	-	-	-
Chrysene	-	**34.32**	c	3.40	c	-
Dibenz(a,h)anthracene	-	**0.11**	c	0.0034	c	-
Dibenzofuran	-	-	-	-	-	-
Diethyl phthalate	-	**14800.52**	n	15000	n	-
Dimethyl phthalate	-	-	-	-	-	-

TABLE 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	New Mexico WQCC Standards	NMED Tap Water	NMED TapW_key	EPA Screening Levels.Tap Water	EPA TapW_key	MCL
Di-n-butyl phthalate	-	**884.80**	n	-	-	-
Di-n-octyl phthalate	-	-	-	-	-	-
Fluoranthene	-	**802.20**	n	800	n	-
Fluorene	-	**287.64**	n	290	n	-
Hexachlorobenzene	-	0.42	c		c	**1**
Hexachlorobutadiene	-	**2.95**	c		c*	-
Hexachlorocyclopentadiene	-	219	n		n	**50**
Hexachloroethane	-	**6.80**	c		c**	-
Indeno(1,2,3-cd)pyrene	-	**0.34**	c		c	-
Isophorone	-	**779.04**	c		c	-
Naphthalene	-	**1.65**	c		c*	-
Nitrobenzene	-	**1.40**	n		c	-
N-Nitrosodimethylamine	-	**0.0017**	c		c	-
N-Nitrosodi-n-propylamine	-	-	-	**0.01**	c	-
N-Nitrosodiphenylamine	-	**0.0049**	c		c	-
Phenanthrene	-	**170.41**	n	-	-	-
Pentachlorophenol	-	1.68	c		c	**1**
Phenol	-	**5761.05**	n		n	-
Pyrene	-	**117.42**	n		n	-
Pyridine	-	-	-	**20**	n	-
TPH (mg/l)						
Gasoline Range Organics (GRO)	-	-	-	-	-	-
Diesel Range Organics (DRO)	-	-	-	-	-	-
Motor Oil Range Organics (MRO	-	-	-	-	-	-

- No screening level available

Bolded value represents applicable screeening level for comparion to site concentrations

EPA - Regional Screening Levels (Nov. 2015) -Tap Water

EPA - Regional Screening Levels (Nov. 2015) - MCL

NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')		SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')		SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')	
					1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002		1505004-003		1505004-004		1505003-001**		1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002	
					4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015	
Metals (mg/kg)																																								
Antimony	3.13E+01	(1)	1.42E+02	(5)	< 1.5756	u	1.9	J	1.5	J	< 1.5365	u	1.7	J	< 1.5281	u	< 3.1112	u	< 1.5824	u	< 1.5131	u	< 1.6799	u	< 1.5535	u	< 1.5096	u	< 1.5344	u	< 1.8521	u	< 2.5689	u	< 2.4884	u	< 1.4919	u	< 1.4559	u	1.9	J
Arsenic	4.25E+00	(1)	2.15E+01	(4)	0.97	J	1.7	J	1.7	J	1.8	J	1.7	J	2.3	J	2.6	J	2.1	J	1.4	J	1.9	J	1.2	J	1.9	J	2.6	J	1.9	J	1.5	J	1.5	J	1.6	J	1.8	J	2.1	J
Barium	1.56E+04	(1)	4.35E+03	(5)	200	v	130	v	170	v	390	v	810	v	280	v	2900	v	750	v	460	v	390	v	140	v	230	v	500	v	190	v	110	v	120	v	200	v	1000	v	550	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.10	v	1.1	v	1.1	v	0.91	v	0.98	v	0.88	v	0.92	v	1.1	v	0.71	v	0.98	v	0.84	v	1	v	0.99	v	1.4	v	1.8	v	1.8	v	0.99	v	1.1	v	1	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	< 0.0333	u	< 0.0353	u	< 0.0324	u	< 0.0324	u	< 0.0318	u	< 0.0323	u	< 0.0657	u	< 0.0334	u	< 0.0319	u	< 0.0355	u	< 0.0328	u	< 0.0319	u	< 0.0324	u	< 0.0391	u	0.062	J	< 0.0525	u	< 0.0315	u	< 0.0307	u	< 0.033	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	10	v	10	v	16	v	11	v	11	v	17	v	29	v	14	v	14	v	9.9	v	7.2	v	15	v	54	v	5	v	< 0.1174	u	2.5	v	15	v	9.3	v	14	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	< 2.4772	u	< 2.5306	u	< 2.3553	u	<1	u	<1	u	< 2.3677	u	< 2.4762	u	< 2.4156	u	< 2.2587	u	< 2.5279	u	< 2.3823	u	< 2.2991	u	<1.0	u	< 2.9184	u	< 4.0338	u	< 3.8844	u	< 2.281	u	< 2.2114	u	< 2.3684	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.20	v	5.4	v	7	v	4.6	v	5.1	v	5	v	6.4	v	8.8	v	3.8	v	4.8	v	4	v	7.4	v	6.7	v	2.9	v	1	v	2.3	v	7.4	v	4.8	v	8	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	< 0.3097	u	< 0.3163	u	< 0.2944	u	< 0.2974	u	< 0.2865	u	< 0.296	u	< 0.3095	u	< 0.3019	u	< 0.2823	u	< 0.316	u	< 0.2978	u	< 0.2874	u	< 0.2973	u	< 0.3648	u	< 0.5042	u	< 0.4855	u	< 0.2851	u	< 0.2764	u	< 0.2961	u
Iron	5.50E+04	(2)	8.20E+05	(6)	16000	v	17000	v	23000	v	15000	v	17000	v	15000	v	13000	v	22000	v	10000	v	14000	v	12000	v	21000	v	18000	v	12000	v	7200	v	10000	v	18000	v	15000	v	20000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	3.20	v	3.2	v	2	v	3.1	v	2.3	v	3.6	v	5.6	v	1.9	v	3.8	v	3.5	v	2.2	v	1.7	v	4.9	v	9.2	v	17	v	16	v	< 0.1235	u	2.5	v	1.6	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	300	v	290	v	480	v	700	v	360	v	820	v	1000	v	1200	v	440	v	310	v	270	v	770	v	870	v	410	v	200	v	280	v	820	v	410	v	760	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	0.01	J	0.0063	J	0.0036	J	0.014	J	0.0062	J	0.1	v	0.087	v	0.0049	J	0.034	J	0.0082	J	0.017	J	0.004	J	0.53	v	0.0087	J	0.0085	J	0.011	J	0.0039	J	0.0055	J	< 0.0035	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	9.10	v	9.6	v	16	v	9.2	v	8.9	v	8.9	v	10	v	16	v	6.5	v	8.3	v	6.8	v	16	v	14	v	4.4	v	0.69	J	3.1	v	15	v	8.2	v	16	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	< 1.8348	u	< 1.9497	u	< 1.7891	u	< 1.7892	u	< 1.7549	u	< 1.7794	u	< 3.6229	u	< 1.8427	u	< 1.762	u	< 1.9562	u	< 1.809	u	< 1.7578	u	< 1.7868	u	< 2.1567	u	< 2.9914	u	< 2.8977	u	< 1.7373	u	< 1.6954	u	< 1.8212	u
Silver	3.91E+02	(1)	1.77E+03	(5)	< 0.0357	u	< 0.0379	u	< 0.0348	u	< 0.0348	u	< 0.0341	u	< 0.0346	u	< 0.0704	u	< 0.0358	u	< 0.0342	u	< 0.038	u	< 0.0352	u	< 0.0342	u	< 0.0347	u	< 0.0419	u	< 0.0581	u	< 0.0563	u	< 0.0338	u	< 0.0329	u	< 0.0354	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	20	v	18	v	17	v	21	v	22	v	22	v	23	v	16	v	17	v	20	v	15	v	22	v	26	v	11	v	2.3	J	7.2	v	18	v	21	v	14	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	17	v	16	v	22	v	18	v	17	v	25	v	35	v	27	v	29	v	16	v	13	v	22	v	150	v	22	v	24	v	27	v	23	v	14	v	23	v
Volatiles (mg/kg)																																								
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	< 0.0028	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0027	u	< 0.0002	u	< 0.0003	u	< 0.0025	u	< 0.0033	u	< 0.0651	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	< 0.0052	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.005	u	< 0.0002	u	< 0.0003	u	< 0.0047	u	< 0.0061	u	< 0.1206	u	< 0.0107	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	< 0.0042	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.004	u	< 0.0003	u	< 0.0004	u	< 0.0038	u	< 0.0049	u	< 0.0962	u	< 0.0086	u	< 0.0004	u	< 0.0005	u	< 0.0005	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	< 0.0041	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0039	u	< 0.0015	u	< 0.0019	u	< 0.0037	u	< 0.0048	u	< 0.0954	u	< 0.0085	u	< 0.0019	u	< 0.0021	u	< 0.0025	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	< 0.0138	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0131	u	< 0.0004	u	< 0.0004	u	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0004	u	< 0.0005	u	< 0.0006	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	< 0.0024	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0003	u	< 0.0021	u	< 0.0028	u	< 0.0547	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,1-Dichloropropene	-	-	-	-	< 0.0051	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0046	u	< 0.006	u	< 0.1182	u	< 0.0105	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	< 0.0074	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.007	u	< 0.0006	u	< 0.0007	u	< 0.0066	u	< 0.0086	u	< 0.1695	u	< 0.0151	u	< 0.0007	u	< 0.0008	u	< 0.0009	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	< 0.0058	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0055	u	< 0.0005	u	< 0.0007	u	< 0.0052	u	< 0.0067	u	< 0.1332	u	< 0.0118	u	< 0.0007	u	< 0.0007	u	< 0.0009	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.00636	u	< 0.00064	u	< 0.00074	u	< 0.00074	u	< 0.00063	u	< 0.00055	u	< 0.00061	u	< 0.00081	u	< 0.00072	u	< 0.00603	u	< 0.00057	u	< 0.00069	u	< 0.00573	u	< 0.00741	u	< 0.14652	u	< 0.01302	u	< 0.00071	u	< 0.00077	u	< 0.00093	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	0.0061	J	0.00062	J	0.00162	J	0.00094	J	0.00066	J	< 0.0004	u	0.000564	J	0.00184	J	0.00077	J	< 0.0016	u	0.000406	J	0.00277	v	0.063	v	0.11	v	25	v	0.17	v	0.00263	v	0.00106	J	0.00363	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	< 0.0059	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0056	u	< 0.0005	u	< 0.0005	u	< 0.0053	u	< 0.0069	u	< 0.1364	u	< 0.0121	u	< 0.0006	u	< 0.0006	u	< 0.0007	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	< 0.0027	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0026	u	< 0.0002	u	< 0.0002	u	< 0.0025	u	< 0.0032	u	< 0.0632	u	< 0.0056	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.00208	u	< 0.00038	u	< 0.00044	u	< 0.00044	u	< 0.00037	u	< 0.00033	u	< 0.00036	u	< 0.00048	u	< 0.00042	u	< 0.00197	u	< 0.00034	u	< 0.00041	u	< 0.00187	u	< 0.00242	u	< 0.04789	u	< 0.00425	u	< 0.00042	u	< 0.00046	u	< 0.00055	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	< 0.0138	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0131	u	< 0.0004	u	< 0.0005	u	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0005	u	< 0.0006	u	< 0.0007	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	< 0.0019	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0005	u	< 0.0004	u	< 0.0018	u	< 0.0003	u	< 0.0004	u	< 0.0017	u	< 0.0022	u	< 0.0444	u	< 0.0039	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	< 0.0023	u	0.00032	J	0.000993	J	< 0.0003	u	< 0.0003	u	< 0.0003	u	0.000351	J	0.00123	J	0.000347	J	0.11	v	< 0.0003	u	0.00184	J	0.041	v	0.054	v	8.4	v	0.056	J	0.00179	J	0.00048	J	0.0022	J
1,3-Dichlorobenzene	-	-	-	-	< 0.00406	u	< 0.00029	u	< 0.00033	u	< 0.00033	u	< 0.00028	u	< 0.00025	u	< 0.00027	u	< 0.00036	u	< 0.00032	u	< 0.00385	u	< 0.00025	u	< 0.00031	u	< 0.00365	u	< 0.00473	u	< 0.09349	u	< 0.0083	u	< 0.00032	u	< 0.00035	u	< 0.00042	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	< 0.0048	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0045	u	< 0.0002	u	< 0.0003	u	< 0.0043	u	< 0.0055	u	< 0.1094	u	< 0.0097	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.00429	u	< 0.00026	u	< 0.00031	u	< 0.00031	u	< 0.00026	u	< 0.00023	u	< 0.00025	u	< 0.00034	u	< 0.0003	u	< 0.00407	u	< 0.00024	u	< 0.00029	u	< 0.00386	u	< 0.005	u	< 0.0989	u	< 0.00879	u	< 0.0003	u	< 0.00032	u	< 0.00039	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	< 0.02069	u	< 0.00067	u	< 0.00077	u	< 0.00078	u	< 0.00066	u	< 0.00058	u	< 0.00064	u	< 0.00085	u	< 0.00075	u	2.9	v	< 0.0006	u	< 0.00072	u	0.51	v	0.63	v	46	v	0.38	v	0.00084	J	< 0.00081	u	< 0.00098	u
2,2-Dichloropropane	-	-	-	-	< 0.005	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0048	u	< 0.0003	u	< 0.0003	u	< 0.0045	u	< 0.0059	u	< 0.1156	u	< 0.0103	u	< 0.0003	u	< 0.0004	u	< 0.0004	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	< 0.0222	u	0.00257	J	0.00156	J	0.0038	J	0.00283	J	0.00273	J	0.00136	J	0.00151	J	0.00407	J	< 0.021	u	0.00153	J	< 0.0006	u	< 0.02	u	< 0.0258	u	< 0.5105	u	< 0.0454	u	< 0.0006	u	0.00176	J	< 0.0008	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	< 0.0039	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0037	u	< 0.0003	u	< 0.0004	u	< 0.0035	u	< 0.0045	u	< 0.0897	u	< 0.008	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	< 0.0085	u	< 0.0004	u	< 0.0004	u	0.00079	J	0.00067	J	0.00066	J	0.000588	J	0.00075	J	0.000886	J	< 0.008	u	0.000559	J	< 0.0004	u	< 0.0076	u	< 0.0099	u	< 0.1953	u	< 0.0174	u	< 0.0004	u	0.00073	J	< 0.0005	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	< 0.02268	u	< 0.00067	u	< 0.00077	u	< 0.00077	u	< 0.00066	u	< 0.00058	u	< 0.00063	u	< 0.00084	u	< 0.00075	u	0.69	v	< 0.00059	u	< 0.00072	u	0.53	v	0.74	v	80	v	0.69	v	0.00085	J	< 0.00081	u	< 0.00097	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	< 0.0026	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0025	u	< 0.0003	u	< 0.0004	u	< 0.0023	u	< 0.003	u	< 0.06	u	< 0.0053	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
4-Isopropyltoluene	-	-	-	-	< 0.0025	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0023	u	< 0.0006	u	< 0.0007	u	0.0061	J	0.0092	J	1.2	v	0.02	J	< 0.0007	u	< 0.0008	u	< 0.001	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	< 0.006	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0057	u	< 0.0006	u	< 0.0008	u	< 0.0054	u	< 0.007	u	< 0.1378	u	< 0.0122	u	< 0.0008	u	< 0.0009	u	< 0.0011	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	0.043	J	0.00926	v	0.00324	J	0.0222	v	0.0199	v	0.0201	v	0.00534	J	0.00158	J	0.0237	v	< 0.0244	u	0.00619	J	0.0018	J	< 0.0232	u	< 0.03	u	< 0.5921	u	< 0.0526	u	0.00186	J	0.00854	J	0.00589	J
Benzene	1.78E+01	(1)	8.72E+01	(4)	< 0.0051	u	0.00211	v	0.0146	v	0.00171	J	0.00203	v	0.00087	J	0.00319	v	0.0141	v	0.00118	J	< 0.0049	u	0.0019	v	0.0204	v	0.014	J	0.04	J	8	v	0.049	J	0.0179	v	0.00387	v	0.0226	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	< 0.0026	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0024	u	< 0.0004	u	< 0.0005	u	< 0.0023	u	< 0.003	u	< 0.0589	u	< 0.0052	u	< 0.0005	u	< 0.0006	u	< 0.0007	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	< 0.0028	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0027	u	< 0.0002	u	< 0.0003	u	< 0.0025	u	< 0.0033	u	< 0.0649	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	< 0.0028	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0026	u	< 0.0004	u	< 0.0005	u	< 0.0025	u	< 0.0032	u	< 0.0638	u	< 0.0057	u	< 0.0005	u	< 0.0005	u	< 0.0006	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	< 0.0067	u	< 0.001	u	< 0.0012	u	< 0.0012	u	< 0.001	u	< 0.0009	u	< 0.001	u	< 0.0013	u	< 0.0011	u	< 0.0063	u	< 0.0009	u	< 0.0011	u	< 0.006	u	< 0.0078	u	< 0.1533	u	< 0.0136	u	< 0.0011	u	< 0.0012	u	< 0.0015	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	< 0.0248	u	< 0.0008	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.001	u	< 0.0009	u	< 0.0236	u	< 0.0007	u	< 0.0008	u	< 0.0224	u	< 0.0289	u	< 0.5714	u	< 0.0508	u	< 0.0009	u	< 0.0009	u	< 0.0011	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0032	u	< 0.0003	u	< 0.0003	u	< 0.003	u	< 0.0039	u	< 0.0773	u	< 0.0069	u	< 0.0003	u	< 0.0004	u	< 0.0005	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	< 0.0027	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0024	u	< 0.0031	u	< 0.0611	u	< 0.0054	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	< 0.0267	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0253	u	< 0.0015	u	< 0.0019	u	< 0.024	u	< 0.0311	u	< 0.6146	u	< 0.0546	u	< 0.0019	u	< 0.0021	u	< 0.0025	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	< 0.0036	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0032	u	< 0.0042	u	< 0.0828	u	< 0.0074	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	< 0.004	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0038	u	< 0.0002	u	< 0.0002	u	< 0.0036	u	< 0.0047	u	< 0.0919	u	< 0.0082	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	< 0.0044	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0041	u	< 0.0004	u	< 0.0005	u	< 0.0039	u	< 0.0051	u	< 0.1005	u	< 0.0089	u	< 0.0005	u	< 0.0005	u	< 0.0007	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0024	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0023	u	< 0.0015	u	< 0.0019	u	< 0.0022	u	< 0.0028	u	< 0.0551	u	< 0.0049	u	< 0.0019	u	< 0.0021	u	< 0.0025	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	< 0.0026	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0023	u	< 0.003	u	< 0.0595	u	< 0.0053	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	< 0.0036	u	< 0.001	u	< 0.0011	u	< 0.0011	u	< 0.001	u	< 0.0008	u	< 0.0009	u	< 0.0012	u	< 0.0011	u	< 0.0034	u	< 0.0009	u	< 0.0011	u	< 0.0033	u	< 0.0042	u	< 0.0836	u	< 0.0074	u	< 0.0011	u	< 0.0012	u	< 0.0014	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')		SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')		SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')	
					1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002		1505004-003		1505004-004		1505003-001**		1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002	
					4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015	
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	< 0.0087	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0082	u	< 0.0006	u	< 0.0008	u	< 0.0078	u	< 0.0101	u	< 0.1997	u	< 0.0177	u	< 0.0008	u	< 0.0008	u	< 0.001	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	< 0.0032	u	0.0318	v	0.00192	J	0.00062	J	0.00047	J	0.00031	J	0.0008	J	0.00231	v	0.000703	J	0.0041	J	0.000421	J	0.00291	v	0.016	J	0.03	J	14	v	0.026	J	0.00258	v	0.00077	J	0.0035	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.00479	u	< 0.00034	u	< 0.0004	u	< 0.0004	u	< 0.00034	u	< 0.0003	u	< 0.00032	u	< 0.00043	u	< 0.00038	u	< 0.00454	u	< 0.0003	u	< 0.00037	u	< 0.00431	u	< 0.00558	u	< 0.11026	u	< 0.00979	u	< 0.00038	u	< 0.00041	u	< 0.0005	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	< 0.0029	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0028	u	< 0.0004	u	0.000482	J	< 0.0026	u	0.0046	J	2.6	v	0.013	J	< 0.0004	u	< 0.0005	u	< 0.0006	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	< 0.0049	u	0.00669	v	< 0.0008	u	< 0.0008	u	0.00283	v	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0046	u	0.00139	J	< 0.0008	u	< 0.0044	u	< 0.0057	u	< 0.1123	u	< 0.01	u	< 0.0008	u	< 0.0009	u	< 0.001	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	< 0.0138	u	0.00062	J	0.000566	J	0.00075	J	< 0.0004	u	0.00039	J	0.000547	J	0.00077	J	0.000606	J	< 0.0131	u	0.000529	J	0.000612	J	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	0.00057	J	0.0007	J	< 0.0006	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	< 0.00821	u	0.00088	J	< 0.00064	u	< 0.00065	u	< 0.00055	u	< 0.00048	u	< 0.00053	u	< 0.0007	u	< 0.00062	u	< 0.00778	u	< 0.0005	u	0.000742	J	0.12	v	0.16	v	26	v	0.11	J	0.00079	J	< 0.00067	u	0.00103	J
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	< 0.003	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0028	u	< 0.0006	u	< 0.0008	u	0.0094	J	0.016	J	1.9	J	0.038	J	< 0.0008	u	< 0.0009	u	< 0.001	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	< 0.0026	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0024	u	< 0.0003	u	0.00051	J	0.0051	J	0.01	J	3.8	v	0.026	J	0.00047	J	< 0.0004	u	0.000638	J
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	< 0.0049	u	0.00059	J	0.000715	J	0.00066	J	< 0.0004	u	< 0.0004	u	0.000555	J	0.00078	J	0.000645	J	< 0.0047	u	0.000667	J	0.000714	J	< 0.0044	u	< 0.0057	u	1.2	v	< 0.0101	u	0.00077	J	0.0007	J	0.000925	J
Styrene	7.26E+03	(1)	1.02E+04	(5)	< 0.0063	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.006	u	< 0.0003	u	< 0.0003	u	< 0.0057	u	< 0.0074	u	< 0.1457	u	< 0.013	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	< 0.004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0037	u	< 0.0002	u	< 0.0003	u	< 0.0036	u	< 0.0046	u	< 0.091	u	< 0.0081	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	< 0.003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0028	u	< 0.0003	u	< 0.0004	u	< 0.0027	u	< 0.0035	u	< 0.0688	u	< 0.0061	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	< 0.0041	u	0.00253	v	0.00836	v	0.00191	J	0.00155	J	0.00116	J	0.00301	v	0.01	v	0.00263	v	< 0.0039	u	0.00162	v	0.0127	v	0.01	J	0.024	J	7.1	v	0.013	J	0.0112	v	0.00275	v	0.0146	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	< 0.0022	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0021	u	< 0.0002	u	< 0.0003	u	< 0.002	u	< 0.0026	u	< 0.0516	u	< 0.0046	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0062	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0059	u	< 0.0002	u	< 0.0002	u	< 0.0056	u	< 0.0072	u	< 0.143	u	< 0.0127	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0032	u	< 0.0003	u	< 0.0004	u	< 0.003	u	< 0.0039	u	< 0.0773	u	< 0.0069	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	< 0.0104	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0099	u	< 0.0003	u	< 0.0004	u	< 0.0094	u	< 0.0121	u	< 0.2397	u	< 0.0213	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	< 0.0138	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0131	u	< 0.0002	u	< 0.0002	u	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	< 0.0096	u	0.197	v	0.00647	v	0.00206	v	0.00143	J	0.00108	J	0.00181	v	0.00707	v	0.00182	J	< 0.0091	u	0.00118	J	0.00975	v	0.14	v	0.15	v	54	v	0.11	J	0.00849	v	0.0022	v	0.0116	v
Semi-volatiles (mg/kg)																																								
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.1259	u	< 0.1289	u	< 0.1198	u	< 0.1209	u	< 0.1175	u	< 0.2426	u	< 0.1259	u	< 0.1232	u	< 0.1146	u	< 0.1201	u	< 0.1177	u	< 0.1164	u	< 1.2319	u	< 0.7588	u	< 0.2044	u	< 0.2032	u	< 0.1151	u	< 0.1126	u	< 0.1209	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.1176	u	< 0.1204	u	< 0.1119	u	< 0.113	u	< 0.1098	u	< 0.2266	u	< 0.1176	u	< 0.1151	u	< 0.1071	u	< 0.1122	u	< 0.11	u	< 0.1088	u	< 1.1511	u	< 0.7091	u	< 0.191	u	< 0.1898	u	< 0.1076	u	< 0.1052	u	< 0.1129	u
1,3-Dichlorobenzene	-	-	-	-	< 0.1092	u	< 0.1118	u	< 0.1039	u	< 0.1049	u	< 0.102	u	< 0.2105	u	< 0.1092	u	< 0.1069	u	< 0.0994	u	< 0.1042	u	< 0.1021	u	< 0.101	u	< 1.0688	u	< 0.6584	u	< 0.1774	u	< 0.1763	u	< 0.0999	u	< 0.0977	u	< 0.1049	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.1286	u	< 0.1317	u	< 0.1224	u	< 0.1236	u	< 0.1201	u	< 0.2478	u	< 0.1287	u	< 0.1258	u	< 0.1171	u	< 0.1227	u	< 0.1203	u	< 0.119	u	< 1.2587	u	< 0.7754	u	< 0.2089	u	< 0.2076	u	< 0.1176	u	< 0.1151	u	< 0.1235	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	< 0.114	u	< 0.1167	u	< 0.1085	u	< 0.1095	u	< 0.1064	u	< 0.2196	u	< 0.114	u	< 0.1115	u	< 0.1038	u	3.6	v	< 0.1066	u	< 0.1054	u	< 1.1155	u	< 0.6871	u	16	v	< 0.184	u	< 0.1042	u	< 0.102	u	< 0.1094	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	< 0.1433	u	< 0.1467	u	< 0.1364	u	< 0.1377	u	< 0.1338	u	< 0.2761	u	< 0.1433	u	< 0.1402	u	< 0.1304	u	< 0.1367	u	< 0.134	u	< 0.1326	u	< 1.4024	u	< 0.8639	u	< 0.2327	u	< 0.2313	u	< 0.131	u	< 0.1282	u	< 0.1376	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	< 0.1422	u	< 0.1456	u	< 0.1353	u	< 0.1366	u	< 0.1328	u	< 0.2739	u	< 0.1422	u	< 0.1391	u	< 0.1294	u	< 0.1356	u	< 0.1329	u	< 0.1315	u	< 1.3913	u	< 0.857	u	< 0.2309	u	< 0.2295	u	< 0.13	u	< 0.1272	u	< 0.1365	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	< 0.123	u	< 0.1259	u	< 0.117	u	< 0.1181	u	< 0.1148	u	< 0.237	u	< 0.123	u	< 0.1203	u	< 0.1119	u	< 0.1173	u	< 0.115	u	< 0.1137	u	< 1.2034	u	< 0.7413	u	< 0.1997	u	< 0.1985	u	< 0.1124	u	< 0.11	u	< 0.1181	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	< 0.0511	u	< 0.0523	u	< 0.0486	u	< 0.0491	u	< 0.0477	u	< 0.0985	u	< 0.0511	u	< 0.05	u	< 0.0465	u	< 0.0487	u	< 0.0478	u	< 0.0473	u	< 0.5	u	< 0.308	u	< 0.083	u	< 0.0825	u	< 0.0467	u	< 0.0457	u	< 0.0491	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	< 0.11	u	< 0.1126	u	< 0.1047	u	< 0.1057	u	< 0.1027	u	< 0.212	u	< 0.11	u	< 0.1076	u	< 0.1001	u	< 0.1049	u	< 0.1029	u	< 0.1018	u	< 1.0766	u	< 0.6632	u	< 0.1787	u	< 0.1776	u	< 0.1006	u	< 0.0984	u	< 0.1056	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	< 0.1367	u	< 0.14	u	< 0.1301	u	< 0.1313	u	< 0.1276	u	< 0.2634	u	< 0.1367	u	< 0.1337	u	< 0.1244	u	< 0.1304	u	< 0.1278	u	< 0.1264	u	< 1.3376	u	< 0.824	u	< 0.222	u	< 0.2206	u	< 0.125	u	< 0.1223	u	< 0.1312	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	< 0.1317	u	< 0.1349	u	< 0.1254	u	< 0.1266	u	< 0.123	u	< 0.2539	u	< 0.1318	u	< 0.1289	u	< 0.1199	u	< 0.1256	u	< 0.1232	u	< 0.1219	u	< 1.2893	u	< 0.7942	u	< 0.214	u	< 0.2126	u	< 0.1205	u	< 0.1179	u	< 0.1265	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	< 0.1148	u	< 0.1175	u	< 0.1092	u	< 0.1102	u	< 0.1072	u	< 0.2211	u	< 0.1148	u	< 0.1123	u	< 0.1045	u	< 0.1094	u	< 0.1073	u	< 0.1062	u	< 1.123	u	< 0.6918	u	< 0.1864	u	< 0.1852	u	< 0.1049	u	< 0.1027	u	< 0.1102	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	< 0.1125	u	< 0.1152	u	< 0.1071	u	< 0.1081	u	< 0.1051	u	< 0.2168	u	< 0.1126	u	< 0.1101	u	< 0.1024	u	0.42	v	< 0.1052	u	< 0.1041	u	< 1.1013	u	< 0.6784	u	26	v	< 0.1816	u	< 0.1029	u	< 0.1007	u	< 0.1081	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	< 0.1233	u	< 0.1262	u	< 0.1173	u	< 0.1184	u	< 0.1151	u	< 0.2375	u	< 0.1233	u	< 0.1206	u	< 0.1122	u	< 0.1176	u	< 0.1153	u	< 0.114	u	< 1.2064	u	< 0.7432	u	< 0.2002	u	< 0.199	u	< 0.1127	u	< 0.1103	u	< 0.1184	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	< 0.1399	u	< 0.1433	u	< 0.1332	u	< 0.1344	u	< 0.1307	u	< 0.2696	u	< 0.14	u	< 0.1369	u	< 0.1274	u	< 0.1334	u	< 0.1308	u	< 0.1294	u	< 1.3693	u	< 0.8435	u	< 0.2272	u	< 0.2258	u	< 0.128	u	< 0.1252	u	< 0.1344	u
2-Nitrophenol	-	-	-	-	< 0.1105	u	< 0.1132	u	< 0.1052	u	< 0.1062	u	< 0.1032	u	< 0.213	u	< 0.1106	u	< 0.1081	u	< 0.1006	u	< 0.1054	u	< 0.1033	u	< 0.1022	u	< 1.0816	u	< 0.6663	u	< 0.1795	u	< 0.1784	u	< 0.1011	u	< 0.0989	u	< 0.1061	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	< 0.0947	u	< 0.097	u	< 0.0901	u	< 0.091	u	< 0.0884	u	< 0.1825	u	< 0.0947	u	< 0.0926	u	< 0.0862	u	< 0.0903	u	< 0.0885	u	< 0.0876	u	< 0.9267	u	< 0.5708	u	< 0.1538	u	< 0.1528	u	< 0.0866	u	< 0.0847	u	< 0.0909	u
3+4-Methylphenol	-	-	-	-	< 0.1274	u	< 0.1305	u	< 0.1213	u	< 0.1224	u	< 0.119	u	< 0.2456	u	< 0.1275	u	< 0.1247	u	< 0.116	u	< 0.1215	u	< 0.1192	u	< 0.1179	u	< 1.2472	u	< 0.7683	u	< 0.207	u	< 0.2057	u	< 0.1165	u	< 0.114	u	< 0.1224	u
3-Nitroaniline	-	-	-	-	< 0.1185	u	< 0.1213	u	< 0.1128	u	< 0.1138	u	< 0.1106	u	< 0.2283	u	< 0.1185	u	< 0.1159	u	< 0.1078	u	< 0.113	u	< 0.1108	u	< 0.1096	u	< 1.1595	u	< 0.7142	u	< 0.1924	u	< 0.1912	u	< 0.1083	u	< 0.106	u	< 0.1138	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	< 0.0669	u	< 0.0685	u	< 0.0636	u	< 0.0642	u	< 0.0624	u	< 0.1288	u	< 0.0669	u	< 0.0654	u	< 0.0609	u	< 0.0638	u	< 0.0625	u	< 0.0618	u	< 0.6543	u	< 0.4031	u	< 0.1086	u	< 0.1079	u	< 0.0611	u	< 0.0598	u	< 0.0642	u
4-Bromophenyl phenyl ether	-	-	-	-	< 0.1305	u	< 0.1336	u	< 0.1242	u	< 0.1253	u	< 0.1218	u	< 0.2514	u	< 0.1305	u	< 0.1276	u	< 0.1188	u	< 0.1244	u	< 0.122	u	< 0.1207	u	< 1.2768	u	< 0.7865	u	< 0.2119	u	< 0.2106	u	< 0.1193	u	< 0.1167	u	< 0.1253	u
4-Chloro-3-methylphenol	-	-	-	-	< 0.1224	u	< 0.1254	u	< 0.1165	u	< 0.1176	u	< 0.1143	u	< 0.2359	u	< 0.1225	u	< 0.1198	u	< 0.1115	u	< 0.1168	u	< 0.1145	u	< 0.1133	u	< 1.1982	u	< 0.7381	u	< 0.1988	u	< 0.1976	u	< 0.112	u	< 0.1096	u	< 0.1176	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	< 0.1137	u	< 0.1164	u	< 0.1082	u	< 0.1093	u	< 0.1062	u	< 0.2191	u	< 0.1138	u	< 0.1113	u	< 0.1035	u	< 0.1085	u	< 0.1063	u	< 0.1052	u	< 1.1129	u	< 0.6856	u	< 0.1847	u	< 0.1836	u	< 0.104	u	< 0.1018	u	< 0.1092	u
4-Chlorophenyl phenyl ether	-	-	-	-	< 0.1831	u	< 0.1875	u	< 0.1743	u	< 0.1759	u	< 0.171	u	< 0.3528	u	< 0.1832	u	< 0.1791	u	< 0.1667	u	< 0.1746	u	< 0.1712	u	< 0.1694	u	< 1.792	u	< 1.1039	u	< 0.2974	u	< 0.2955	u	< 0.1674	u	< 0.1638	u	< 0.1758	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	< 0.1105	u	< 0.1131	u	< 0.1051	u	< 0.1061	u	< 0.1031	u	< 0.2128	u	< 0.1105	u	< 0.1081	u	< 0.1005	u	< 0.1053	u	< 0.1033	u	< 0.1022	u	< 1.0809	u	< 0.6658	u	< 0.1794	u	< 0.1783	u	< 0.101	u	< 0.0988	u	< 0.1061	u
4-Nitrophenol	-	-	-	-	< 0.1059	u	< 0.1085	u	< 0.1008	u	< 0.1018	u	< 0.0989	u	< 0.2042	u	< 0.106	u	< 0.1037	u	< 0.0964	u	< 0.101	u	< 0.0991	u	< 0.098	u	< 1.0368	u	< 0.6387	u	< 0.1721	u	< 0.171	u	< 0.0969	u	< 0.0948	u	< 0.1017	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	< 0.1498	u	< 0.1534	u	< 0.1426	u	< 0.144	u	< 0.1399	u	< 0.2887	u	< 0.1499	u	< 0.1466	u	< 0.1364	u	< 0.1429	u	< 0.1401	u	< 0.1386	u	< 1.4664	u	< 0.9033	u	< 0.2434	u	< 0.2419	u	< 0.137	u	< 0.1341	u	< 0.1439	u
Acenaphthylene	-	-	-	-	< 0.1246	u	< 0.1276	u	< 0.1186	u	< 0.1197	u	< 0.1163	u	< 0.24	u	< 0.1246	u	< 0.1219	u	< 0.1134	u	< 0.1188	u	< 0.1165	u	< 0.1152	u	< 1.2191	u	< 0.751	u	< 0.2023	u	< 0.2011	u	< 0.1139	u	< 0.1115	u	< 0.1196	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	< 0.107	u	< 0.1096	u	< 0.1019	u	< 0.1028	u	< 0.0999	u	< 0.2062	u	< 0.1071	u	< 0.1047	u	< 0.0974	u	< 0.1021	u	< 0.1001	u	< 0.099	u	< 1.0475	u	< 0.6453	u	< 0.1738	u	< 0.1728	u	< 0.0979	u	< 0.0958	u	< 0.1028	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	< 0.1045	u	< 0.107	u	< 0.0994	u	< 0.1003	u	< 0.0975	u	< 0.2013	u	< 0.1045	u	< 0.1022	u	< 0.0951	u	< 0.0996	u	< 0.0977	u	< 0.0966	u	< 1.0222	u	< 0.6297	u	< 0.1696	u	< 0.1686	u	< 0.0955	u	< 0.0935	u	< 0.1003	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	< 0.1379	u	< 0.1411	u	< 0.1312	u	< 0.1324	u	< 0.1287	u	< 0.2656	u	< 0.1379	u	< 0.1349	u	< 0.1255	u	< 0.1315	u	< 0.1289	u	< 0.1275	u	< 1.349	u	< 0.831	u	< 0.2239	u	< 0.2225	u	< 0.1261	u	< 0.1233	u	< 0.1324	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	< 0.0966	u	< 0.099	u	< 0.092	u	< 0.0928	u	< 0.0902	u	< 0.1862	u	< 0.0967	u	< 0.0946	u	< 0.088	u	< 0.0922	u	< 0.0904	u	< 0.0894	u	< 0.9458	u	< 0.5826	u	< 0.157	u	< 0.156	u	< 0.0884	u	< 0.0865	u	< 0.0928	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	< 0.138	u	< 0.1413	u	< 0.1313	u	< 0.1326	u	< 0.1289	u	< 0.2659	u	< 0.138	u	< 0.135	u	< 0.1256	u	< 0.1316	u	< 0.129	u	< 0.1277	u	< 1.3505	u	< 0.8319	u	< 0.2241	u	< 0.2227	u	< 0.1262	u	< 0.1235	u	< 0.1325	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	< 0.1168	u	< 0.1196	u	< 0.1111	u	< 0.1122	u	< 0.109	u	< 0.225	u	< 0.1168	u	< 0.1142	u	< 0.1063	u	< 0.1114	u	< 0.1092	u	< 0.108	u	< 1.1427	u	< 0.7039	u	< 0.1896	u	< 0.1885	u	< 0.1068	u	< 0.1045	u	< 0.1121	u
Benzo(g,h,i)perylene	-	-	-	-	< 0.1399	u	< 0.1433	u	< 0.1332	u	< 0.1344	u	< 0.1307	u	< 0.2696	u	< 0.14	u	< 0.1369	u	< 0.1274	u	< 0.1335	u	< 0.1308	u	< 0.1294	u	< 1.3694	u	< 0.8436	u	< 0.2273	u	< 0.2259	u	< 0.128	u	< 0.1252	u	< 0.1344	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	< 0.139	u	< 0.1423	u	< 0.1323	u	< 0.1335	u	< 0.1298	u	< 0.2678	u	< 0.139	u	< 0.136	u	< 0.1265	u	< 0.1325	u	< 0.1299	u	< 0.1285	u	< 1.36	u	< 0.8377	u	< 0.2257	u	< 0.2243	u	< 0.1271	u	< 0.1243	u	< 0.1334	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	< 0.0701	u	< 0.0717	u	< 0.0667	u	< 0.0673	u	< 0.0654	u	< 0.135	u	< 0.0701	u	< 0.0685	u	< 0.0638	u	< 0.0668	u	< 0.0655	u	< 0.0648	u	< 0.6857	u	< 0.4224	u	< 0.1138	u	< 0.1131	u	< 0.0641	u	< 0.0627	u	< 0.0673	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	< 0.1092	u	< 0.1118	u	< 0.104	u	< 0.1049	u	< 0.102	u	< 0.2105	u	< 0.1093	u	< 0.1069	u	< 0.0994	u	< 0.1042	u	< 0.1021	u	< 0.101	u	< 1.0689	u	< 0.6585	u	< 0.1774	u	< 0.1763	u	< 0.0999	u	< 0.0977	u	< 0.1049	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	< 0.1174	u	< 0.1202	u	< 0.1117	u	< 0.1127	u	< 0.1096	u	< 0.2262	u	< 0.1174	u	< 0.1148	u	< 0.1068	u	< 0.1119	u	< 0.1097	u	< 0.1086	u	< 1.1486	u	< 0.7075	u	< 0.1906	u	< 0.1894	u	< 0.1073	u	< 0.105	u	< 0.1127	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	< 0.1215	u	< 0.1244	u	< 0.1156	u	< 0.1167	u	< 0.1135	u	< 0.2341	u	< 0.1215	u	< 0.1189	u	< 0.1106	u	< 0.1159	u	< 0.1136	u	< 0.1124	u	< 1.1891	u	< 0.7325	u	< 0.1973	u	< 0.1961	u	< 0.1111	u	< 0.1087	u	< 0.1167	u
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	< 0.0939	u	< 0.0962	u	< 0.0894	u	< 0.0902	u	< 0.0877	u	< 0.181	u	< 0.094	u	< 0.0919	u	< 0.0855	u	< 0.0896	u	< 0.0878	u	< 0.0869	u	< 0.9193	u	< 0.5663	u	< 0.1526	u	< 0.1516	u	< 0.0859	u	< 0.0841	u	< 0.0902	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	< 0.1382	u	< 0.1415	u	< 0.1315	u	< 0.1327	u	< 0.129	u	0.29	J	< 0.1382	u	< 0.1352	u	< 0.1258	u	< 0.1318	u	< 0.1292	u	< 0.1278	u	< 1.352	u	< 0.8328	u	< 0.2244	u	< 0.223	u	< 0.1263	u	< 0.1236	u	< 0.1327	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')		SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')		SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')	
					1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002		1505004-003		1505004-004		1505003-001**		1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002	
					4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015	
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	< 0.1501	u	< 0.1537	u	< 0.1429	u	< 0.1442	u	< 0.1402	u	< 0.2893	u	< 0.1502	u	< 0.1469	u	< 0.1367	u	< 0.1432	u	< 0.1404	u	< 0.1389	u	< 1.4691	u	< 0.905	u	< 0.2438	u	< 0.2423	u	< 0.1373	u	< 0.1343	u	< 0.1441	u
Carbazole	-	-	-	-	< 0.1145	u	< 0.1173	u	< 0.109	u	< 0.11	u	< 0.1069	u	< 0.2207	u	< 0.1146	u	< 0.112	u	< 0.1043	u	< 0.1092	u	< 0.1071	u	< 0.1059	u	< 1.1208	u	< 0.6904	u	< 0.186	u	< 0.1849	u	< 0.1047	u	< 0.1025	u	< 0.11	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	< 0.1235	u	< 0.1264	u	< 0.1175	u	< 0.1186	u	< 0.1153	u	< 0.2379	u	< 0.1235	u	< 0.1208	u	< 0.1124	u	< 0.1178	u	< 0.1155	u	< 0.1142	u	< 1.2084	u	< 0.7444	u	< 0.2005	u	< 0.1993	u	< 0.1129	u	< 0.1105	u	< 0.1186	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	< 0.1332	u	< 0.1364	u	< 0.1268	u	< 0.128	u	< 0.1244	u	< 0.2567	u	< 0.1333	u	< 0.1303	u	< 0.1213	u	< 0.1271	u	< 0.1246	u	< 0.1232	u	< 1.3037	u	< 0.8031	u	< 0.2164	u	< 0.215	u	< 0.1218	u	< 0.1192	u	< 0.1279	u
Dibenzofuran	-	-	-	-	< 0.1315	u	< 0.1347	u	< 0.1252	u	< 0.1263	u	< 0.1228	u	< 0.2534	u	< 0.1315	u	< 0.1287	u	< 0.1197	u	< 0.1254	u	< 0.123	u	< 0.1216	u	< 1.287	u	< 0.7928	u	< 0.2136	u	< 0.2123	u	< 0.1203	u	< 0.1177	u	< 0.1263	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	< 0.1396	u	< 0.1429	u	< 0.1328	u	< 0.1341	u	< 0.1303	u	< 0.2689	u	< 0.1396	u	< 0.1365	u	< 0.127	u	< 0.1331	u	< 0.1305	u	< 0.1291	u	< 1.3657	u	< 0.8413	u	< 0.2266	u	< 0.2252	u	< 0.1276	u	< 0.1249	u	< 0.134	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	< 0.1132	u	< 0.1159	u	< 0.1077	u	< 0.1087	u	< 0.1057	u	< 0.2181	u	< 0.1132	u	< 0.1107	u	< 0.103	u	< 0.1079	u	< 0.1058	u	< 0.1047	u	< 1.1075	u	< 0.6822	u	< 0.1838	u	< 0.1827	u	< 0.1035	u	< 0.1013	u	< 0.1087	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	< 0.1391	u	< 0.1424	u	< 0.1324	u	< 0.1336	u	< 0.1299	u	< 0.268	u	< 0.1391	u	< 0.1361	u	< 0.1266	u	< 0.1326	u	< 0.13	u	< 0.1286	u	< 1.361	u	< 0.8384	u	< 0.2259	u	< 0.2245	u	< 0.1272	u	< 0.1244	u	< 0.1335	u
Di-n-octyl phthalate	-	-	-	-	< 0.1369	u	< 0.1402	u	< 0.1303	u	< 0.1315	u	< 0.1278	u	< 0.2638	u	< 0.1369	u	< 0.1339	u	< 0.1246	u	< 0.1306	u	< 0.128	u	< 0.1266	u	< 1.3397	u	< 0.8252	u	< 0.2223	u	< 0.221	u	< 0.1252	u	< 0.1225	u	< 0.1314	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	< 0.1492	u	< 0.1528	u	< 0.142	u	< 0.1434	u	< 0.1393	u	< 0.2875	u	< 0.1493	u	< 0.146	u	< 0.1358	u	< 0.1423	u	< 0.1395	u	< 0.138	u	< 1.4603	u	< 0.8996	u	< 0.2423	u	< 0.2408	u	< 0.1365	u	< 0.1335	u	< 0.1433	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	< 0.1674	u	< 0.1714	u	< 0.1593	u	< 0.1608	u	< 0.1563	u	< 0.3226	u	< 0.1674	u	< 0.1638	u	< 0.1524	u	0.22	j	< 0.1565	u	< 0.1549	u	< 1.6383	u	< 1.0092	u	1.4	v	< 0.2702	u	< 0.1531	u	< 0.1498	u	< 0.1607	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	< 0.1161	u	< 0.1188	u	< 0.1105	u	< 0.1115	u	< 0.1084	u	< 0.2236	u	< 0.1161	u	< 0.1135	u	< 0.1056	u	< 0.1107	u	< 0.1085	u	< 0.1074	u	< 1.1358	u	< 0.6997	u	< 0.1885	u	< 0.1873	u	< 0.1061	u	< 0.1038	u	< 0.1114	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.1217	u	< 0.1246	u	< 0.1158	u	< 0.1169	u	< 0.1136	u	< 0.2344	u	< 0.1217	u	< 0.119	u	< 0.1107	u	< 0.116	u	< 0.1138	u	< 0.1125	u	< 1.1906	u	< 0.7334	u	< 0.1976	u	< 0.1964	u	< 0.1112	u	< 0.1089	u	< 0.1168	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	< 0.0853	u	< 0.0873	u	< 0.0812	u	< 0.0819	u	< 0.0796	u	< 0.1644	u	< 0.0853	u	< 0.0834	u	< 0.0776	u	< 0.0813	u	< 0.0797	u	< 0.0789	u	< 0.8347	u	< 0.5142	u	< 0.1385	u	< 0.1377	u	< 0.078	u	< 0.0763	u	< 0.0819	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	< 0.1095	u	< 0.1121	u	< 0.1042	u	< 0.1052	u	< 0.1022	u	< 0.2109	u	< 0.1095	u	< 0.1071	u	< 0.0996	u	< 0.1044	u	< 0.1023	u	< 0.1012	u	< 1.0712	u	< 0.6599	u	< 0.1778	u	< 0.1767	u	< 0.1001	u	< 0.0979	u	< 0.1051	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	< 0.1397	u	< 0.1431	u	< 0.133	u	< 0.1342	u	< 0.1305	u	< 0.2693	u	< 0.1398	u	< 0.1367	u	< 0.1272	u	< 0.1333	u	< 0.1307	u	< 0.1293	u	< 1.3676	u	< 0.8424	u	< 0.2269	u	< 0.2256	u	< 0.1278	u	< 0.125	u	< 0.1342	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	< 0.117	u	< 0.1198	u	< 0.1114	u	< 0.1124	u	< 0.1093	u	< 0.2255	u	< 0.117	u	< 0.1145	u	< 0.1065	u	< 0.1116	u	< 0.1094	u	< 0.1082	u	< 1.145	u	< 0.7053	u	5.8	v	< 0.1889	u	< 0.107	u	< 0.1047	u	< 0.1123	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	< 0.1266	u	< 0.1296	u	< 0.1205	u	< 0.1216	u	< 0.1182	u	< 0.244	u	< 0.1266	u	< 0.1239	u	< 0.1152	u	< 0.1207	u	< 0.1184	u	< 0.1171	u	< 1.239	u	< 0.7632	u	< 0.2056	u	< 0.2043	u	< 0.1158	u	< 0.1133	u	< 0.1216	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	< 0.1275	u	< 0.1305	u	< 0.1213	u	< 0.1224	u	< 0.119	u	< 0.2456	u	< 0.1275	u	< 0.1247	u	< 0.116	u	< 0.1216	u	< 0.1192	u	< 0.1179	u	< 1.2474	u	< 0.7684	u	< 0.207	u	< 0.2057	u	< 0.1166	u	< 0.114	u	< 0.1224	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	< 0.1101	u	< 0.1127	u	< 0.1048	u	< 0.1058	u	< 0.1028	u	< 0.2121	u	< 0.1101	u	< 0.1077	u	< 0.1002	u	< 0.105	u	< 0.1029	u	< 0.1018	u	< 1.0774	u	< 0.6637	u	< 0.1788	u	< 0.1777	u	< 0.1007	u	< 0.0985	u	< 0.1057	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	< 0.0768	u	< 0.0786	u	< 0.0731	u	< 0.0738	u	< 0.0717	u	< 0.1479	u	< 0.0768	u	< 0.0751	u	< 0.0699	u	< 0.0732	u	< 0.0718	u	< 0.071	u	< 0.7513	u	< 0.4628	u	< 0.1247	u	< 0.1239	u	< 0.0702	u	< 0.0687	u	< 0.0737	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	< 0.1286	u	< 0.1317	u	< 0.1224	u	< 0.1236	u	< 0.1201	u	< 0.2479	u	< 0.1287	u	< 0.1259	u	< 0.1171	u	0.8	v	< 0.1203	u	< 0.119	u	< 1.2589	u	1.1	J	3	v	< 0.2076	u	< 0.1176	u	< 0.1151	u	< 0.1235	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	< 0.1102	u	< 0.1128	u	< 0.1049	u	< 0.1059	u	< 0.1029	u	< 0.2124	u	< 0.1102	u	< 0.1078	u	< 0.1003	u	< 0.1051	u	< 0.103	u	< 0.1019	u	< 1.0785	u	< 0.6644	u	< 0.179	u	< 0.1779	u	< 0.1008	u	< 0.0986	u	< 0.1058	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	< 0.1587	u	< 0.1625	u	< 0.151	u	< 0.1525	u	< 0.1482	u	< 0.3058	u	< 0.1587	u	< 0.1553	u	< 0.1445	u	< 0.1514	u	< 0.1484	u	< 0.1468	u	< 1.5531	u	< 0.9567	u	< 0.2577	u	< 0.2562	u	< 0.1451	u	< 0.142	u	< 0.1524	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	< 0.1033	u	< 0.1058	u	< 0.0983	u	< 0.0993	u	< 0.0965	u	< 0.1991	u	< 0.1034	u	< 0.1011	u	< 0.0941	u	< 0.0985	u	< 0.0966	u	< 0.0956	u	< 1.0112	u	< 0.6229	u	< 0.1678	u	< 0.1668	u	< 0.0945	u	< 0.0925	u	< 0.0992	u
Total Petroleum Hydrocarbons (mg/kg)																																										
Gasoline Range Organics (GRO)	-		-		< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	25	v	< 1	u	< 1	u	2.5	J	4.7	v	740	v	13	v	< 1	u	< 1	u	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(9)	3.80E+03	(9)	93	v	< 5	u	< 6	u	24	v	< 6	u	84	v	42	v	< 5	u	160	v	**4100**	v	< 5	u	< 5	u	**7700**	v	780	v	**3000**	v	< 5	u	< 6	u	< 6	u	< 5	u
Motor Oil Range Organics (MRO)	1.00E+03	(9)	3.80E+03	(9)	53	v	< 49	u	< 50	u	58	v	< 50	u	90	v	69	v	< 49	u	330	v	690	v	< 49	u	< 49	u	**5900**	v	300	v	< 484	u	< 50	u	< 50	u	< 50	u	< 48	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (July
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
() NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels9
Bold with yellow highlight value exceeds Residential Screening Level
* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003
v = reportable detection above the Practical quantitation limit (PQL)
u - result is not detected at method detection limit (MDL)
j - estimated result at concentration above MDL but less than PQL

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')		SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')		SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')		SWMU 10-13 (6-8')	
					1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007		1505057-001		1505057-002		1505057-003		1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003		1505617-004	
					5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015	
Metals (mg/kg)																																										
Antimony	3.13E+01	(1)	1.42E+02	(5)	< 1.5741	u	< 7.9126	u	< 7.6176	u	< 1.4477	u	< 1.4892	u	< 1.5077	u	< 1.5359	u	< 1.5635	u	< 1.5233	u	< 1.4463	u	< 1.5493	u	2.7	J	< 1.4896	u	< 3.243	u	< 3.0138	u	< 2.9662	u	< 1.4434	u	< 1.4296	u	< 3.1409	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.1	J	2.2	J	< 1.6999	u	1.5	J	1.9	J	2	J	1.8	J	1.1	J	2.2	J	2.4	J	1.6	J	1.9	J	< 0.3324	u	0.91	J	0.84	J	1.9	J	2	J	1.3	J	1.3	J
Barium	1.56E+04	(1)	4.35E+03	(5)	220	v	200	v	250	v	830	v	130	v	470	v	220	v	250	v	360	v	450	v	360	v	240	v	240	v	330	v	420	v	1700	v	500	v	260	v	200	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	0.85	v	0.92	v	1.1	v	0.65	v	0.83	v	0.99	v	0.77	v	0.94	v	0.99	v	0.28	v	0.93	v	1	v	0.61	v	0.98	v	0.89	v	1.1	v	0.94	v	0.71	v	1.2	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	< 0.0332	u	< 0.0334	u	< 0.0322	u	< 0.0306	u	< 0.0314	u	< 0.0318	u	< 0.0324	u	< 0.033	u	< 0.0322	u	< 0.0305	u	< 0.0327	u	< 0.0322	u	< 0.0314	u	< 0.0685	u	< 0.0318	u	< 0.0313	u	< 0.0305	u	< 0.0302	u	< 0.0332	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	11	v	11	v	16	v	29	v	11	v	20	v	17	v	14	v	14	v	13	v	12	v	14	v	7.3	v	8.1	v	11	v	12	v	14	v	7.8	v	11	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	< 2.3708	u	< 2.3862	u	< 2.3465	u	< 2.2842	u	< 2.3284	u	< 2.3189	u	< 2.3327	u	< 2.4023	u	< 2.3271	u	< 2.2802	u	< 2.4258	u	< 2.3458	u	< 2.2359	u	< 2.4211	u	< 2.2794	u	< 2.3277	u	< 2.1955	u	< 2.1284	u	< 2.3615	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	4.8	v	5.7	v	7.2	v	3.9	v	4.5	v	8.7	v	4.6	v	5.3	v	7.6	v	3.1	v	4.1	v	7.9	v	3.5	v	5	v	7.7	v	5.7	v	9.1	v	4	v	5.9	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	< 0.2963	u	< 0.2983	u	< 0.2933	u	< 0.2855	u	< 0.291	u	< 0.2899	u	< 0.2916	u	< 0.3003	u	< 0.2909	u	< 0.285	u	< 0.3032	u	< 0.2932	u	< 0.2795	u	< 0.3026	u	< 0.2849	u	< 0.291	u	< 0.2744	u	< 0.2661	u	< 0.2952	u
Iron	5.50E+04	(2)	8.20E+05	(6)	15000	v	16000	v	24000	v	14000	v	13000	v	17000	v	12000	v	16000	v	20000	v	9200	v	13000	v	20000	v	9200	v	12000	v	16000	v	21000	v	20000	v	15000	v	18000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.7	v	2.5	v	2.2	v	4.5	v	3.4	v	0.27	J	4.8	v	3.2	v	2.3	v	4.1	v	4	v	2	v	3.4	v	5.8	v	3.5	v	3.7	v	1.8	v	2.9	v	5.2	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	860	v	710	v	540	v	380	v	370	v	1200	v	180	v	290	v	860	v	94	v	170	v	990	v	320	v	400	v	890	v	470	v	1300	v	390	v	190	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	0.033	J	0.0057	J	0.0035	J	0.015	J	0.041	v	0.0037	J	0.07	J	0.0086	J	0.0059	J	0.044	v	0.012	J	< 0.0032	u	0.05	v	0.014	J	< 0.0032	u	< 0.0034	u	< 0.0032	u	< 0.003	u	< 0.0034	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	8.4	v	10	v	16	v	6.9	v	7.8	v	16	v	7.7	v	10	v	15	v	4.4	v	7.7	v	17	v	5.8	v	7.8	v	13	v	10	v	16	v	6.5	v	11	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	< 1.8329	u	< 1.8428	u	< 1.7741	u	< 1.6858	u	< 1.7341	u	< 1.7557	u	< 1.7886	u	< 1.8206	u	< 1.7738	u	< 1.6842	u	< 1.8042	u	< 1.7762	u	< 1.7346	u	< 3.7764	u	< 1.7547	u	< 1.727	u	< 1.6808	u	< 1.6647	u	< 1.8287	u
Silver	3.91E+02	(1)	1.77E+03	(5)	< 0.0356	u	< 0.0358	u	< 0.0345	u	< 0.0328	u	< 0.0337	u	< 0.0341	u	< 0.0348	u	< 0.0354	u	< 0.0345	u	< 0.0327	u	< 0.0351	u	< 0.0345	u	< 0.0337	u	< 0.0734	u	< 0.0341	u	< 0.0336	u	< 0.0327	u	< 0.0323	u	< 0.0355	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	23	v	24	v	23	v	22	v	17	v	15	v	18	v	19	v	49	v	21	v	18	v	21	v	13	v	14	v	5.2	v	21	v	25	v	19	v	19	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	20	v	19	v	24	v	17	v	18	v	24	v	24	v	32	v	21	v	15	v	19	v	25	v	16	v	18	v	23	v	20	v	28	v	13	v	17	v
Volatiles (mg/kg)																																										
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0536	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0119	u	< 0.0004	u	< 0.0003	u	< 0.0489	u	< 0.0003	u	< 0.0129	u	< 0.0027	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0028	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0993	u	< 0.0048	u	< 0.0003	u	< 0.0002	u	< 0.022	u	< 0.0003	u	< 0.0002	u	< 0.0905	u	< 0.0003	u	< 0.0238	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0051	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0792	u	< 0.0038	u	< 0.0004	u	< 0.0004	u	< 0.0175	u	< 0.0005	u	< 0.0004	u	< 0.0722	u	< 0.0004	u	< 0.019	u	< 0.0039	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0409	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.0786	u	< 0.0038	u	< 0.0019	u	< 0.0018	u	< 0.0174	u	< 0.0024	u	< 0.0016	u	< 0.0716	u	< 0.0019	u	< 0.0189	u	< 0.0039	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u	< 0.0041	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	0.000473	J	< 0.0004	u	< 0.0005	u	< 0.2615	u	< 0.0125	u	< 0.0004	u	< 0.0004	u	< 0.0578	u	< 0.0006	u	< 0.0004	u	< 0.2384	u	< 0.0004	u	< 0.0628	u	< 0.0129	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0135	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.045	u	< 0.0022	u	< 0.0003	u	< 0.0003	u	< 0.01	u	< 0.0004	u	< 0.0003	u	< 0.041	u	< 0.0003	u	< 0.0108	u	< 0.0022	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0023	u
1,1-Dichloropropene	-	-	-	-	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0974	u	< 0.0047	u	< 0.0003	u	< 0.0003	u	< 0.0215	u	< 0.0004	u	< 0.0003	u	< 0.0888	u	< 0.0003	u	< 0.0234	u	< 0.0048	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.005	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.1395	u	< 0.0067	u	< 0.0007	u	< 0.0006	u	< 0.0309	u	< 0.0009	u	< 0.0006	u	< 0.1272	u	< 0.0007	u	< 0.0335	u	< 0.0069	u	< 0.0009	u	< 0.0009	u	< 0.001	u	< 0.0009	u	< 0.072	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.1097	u	< 0.0053	u	< 0.0007	u	< 0.0006	u	< 0.0243	u	< 0.0008	u	< 0.0006	u	< 0.1272	u	< 0.0007	u	< 0.0263	u	< 0.0054	u	< 0.0009	u	< 0.0008	u	< 0.001	u	< 0.0009	u	< 0.0566	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.00072	u	< 0.00066	u	< 0.00082	u	< 0.12063	u	< 0.00578	u	< 0.00071	u	< 0.00065	u	< 0.02668	u	< 0.00088	u	< 0.00059	u	< 0.10998	u	< 0.00069	u	< 0.02897	u	< 0.00596	u	< 0.0009	u	< 0.00087	u	< 0.00103	u	< 0.00093	u	< 0.06224	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	< 0.0005	u	0.00194	v	0.00201	J	9.7	v	0.021	J	0.00236	v	< 0.0005	u	0.42	v	0.00229	J	< 0.0004	u	13	v	0.00238	v	0.4	v	0.79	v	0.00377	v	< 0.0006	u	0.00203	J	< 0.0007	u	5.2	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.1123	u	< 0.0054	u	< 0.0006	u	< 0.0005	u	< 0.0248	u	< 0.0007	u	< 0.0005	u	< 0.1024	u	< 0.0005	u	< 0.027	u	< 0.0056	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.0007	u	< 0.0579	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0521	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0115	u	< 0.0003	u	< 0.0002	u	< 0.0475	u	< 0.0002	u	< 0.0125	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0027	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.00042	u	< 0.00039	u	< 0.00048	u	< 0.03943	u	< 0.00189	u	< 0.00042	u	< 0.00038	u	< 0.00872	u	< 0.00052	u	< 0.00035	u	< 0.03595	u	< 0.00041	u	< 0.00947	u	< 0.00194	u	< 0.00053	u	< 0.00051	u	< 0.00061	u	< 0.00055	u	< 0.02034	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.2615	u	< 0.0125	u	< 0.0005	u	< 0.0005	u	< 0.0578	u	< 0.0006	u	< 0.0004	u	< 0.2384	u	< 0.0005	u	< 0.0628	u	< 0.0129	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0135	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0365	u	< 0.0018	u	< 0.0004	u	< 0.0004	u	< 0.0081	u	< 0.0005	u	< 0.0003	u	< 0.0333	u	< 0.0004	u	< 0.0088	u	< 0.0018	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0019	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	< 0.0003	u	0.00119	J	0.00114	J	4.7	v	0.0048	J	0.00159	J	< 0.0003	u	0.12	J	0.00151	J	< 0.0003	u	4.7	v	0.00151	J	0.31	v	0.29	v	0.00245	v	< 0.0004	u	0.00134	J	< 0.0004	u	1.9	v
1,3-Dichlorobenzene	-	-	-	-	< 0.00032	u	< 0.0003	u	< 0.00037	u	< 0.07697	u	< 0.00369	u	< 0.00032	u	< 0.00029	u	< 0.01702	u	< 0.00039	u	< 0.00027	u	< 0.07018	u	< 0.00031	u	< 0.01848	u	< 0.0038	u	< 0.00041	u	< 0.00039	u	< 0.00046	u	< 0.00042	u	< 0.03972	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.09	u	< 0.0043	u	< 0.0003	u	< 0.0003	u	< 0.0199	u	< 0.0004	u	< 0.0002	u	< 0.0821	u	< 0.0003	u	< 0.0216	u	< 0.0045	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0046	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.0003	u	< 0.00027	u	< 0.00034	u	< 0.08143	u	< 0.0039	u	< 0.00029	u	< 0.00027	u	< 0.01801	u	< 0.00037	u	< 0.00025	u	< 0.07423	u	< 0.00029	u	< 0.01955	u	< 0.00402	u	< 0.00038	u	< 0.00036	u	< 0.00043	u	< 0.00039	u	< 0.04201	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	< 0.00075	u	< 0.00069	u	< 0.00086	u	27	v	0.37	v	< 0.00074	u	< 0.00068	u	1.1	v	< 0.00092	u	< 0.00062	u	28	v	< 0.00072	u	1.6	v	1.3	v	0.00126	J	< 0.00091	u	< 0.00108	u	< 0.00097	u	11	v
2,2-Dichloropropane	-	-	-	-	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0952	u	< 0.0046	u	< 0.0003	u	< 0.0003	u	< 0.021	u	< 0.0004	u	< 0.0003	u	< 0.0868	u	< 0.0003	u	< 0.0229	u	< 0.0047	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0049	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	0.00273	J	0.00175	J	< 0.0007	u	< 0.4203	u	< 0.0202	u	< 0.0006	u	0.00234	J	< 0.093	u	< 0.0008	u	0.00161	J	< 0.3832	u	0.00159	J	< 0.1009	u	< 0.0208	u	< 0.0008	u	0.00208	J	0.00234	J	0.00424	J	< 0.0217	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0739	u	< 0.0035	u	< 0.0004	u	< 0.0003	u	< 0.0163	u	< 0.0005	u	< 0.0003	u	< 0.0674	u	< 0.0004	u	< 0.0177	u	< 0.0037	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0381	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	0.000724	J	< 0.0004	u	< 0.0005	u	< 0.1608	u	< 0.0077	u	< 0.0004	u	< 0.0004	u	< 0.0356	u	< 0.0005	u	0.000582	J	< 0.1466	u	< 0.0004	u	< 0.0386	u	< 0.0079	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	0.00096	J	< 0.0083	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	< 0.00075	u	< 0.00069	u	< 0.00085	u	41	v	0.3	v	< 0.00074	u	< 0.00068	u	1.5	v	< 0.00092	u	< 0.00062	u	48	v	< 0.00072	u	1.8	v	2.3	v	0.0013	J	< 0.00091	u	< 0.00107	u	< 0.00097	u	20	v
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0494	u	< 0.0024	u	< 0.0004	u	< 0.0003	u	< 0.0109	u	< 0.0005	u	< 0.0003	u	< 0.0451	u	< 0.0004	u	< 0.0119	u	< 0.0024	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0255	u
4-Isopropyltoluene	-	-	-	-	< 0.0007	u	< 0.0007	u	< 0.0009	u	0.95	v	0.014	J	< 0.0007	u	< 0.0007	u	< 0.0103	u	< 0.0009	u	< 0.0006	u	0.74	v	< 0.0007	u	< 0.0112	u	< 0.0023	u	< 0.0009	u	< 0.0009	u	< 0.0011	u	< 0.001	u	0.37	v
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	< 0.0008	u	< 0.0008	u	< 0.0009	u	< 0.1134	u	< 0.0054	u	< 0.0008	u	< 0.0007	u	< 0.0251	u	< 0.001	u	< 0.0007	u	< 0.1034	u	< 0.0008	u	< 0.0272	u	< 0.0056	u	< 0.001	u	< 0.001	u	< 0.0012	u	< 0.0011	u	< 0.0059	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	0.0111	v	0.00723	J	0.00158	J	< 0.4875	u	< 0.0234	u	0.00466	J	0.0184	v	< 0.1078	u	0.00359	J	0.00792	J	< 0.4444	u	0.00422	J	0.15	J	0.058	J	0.00262	J	0.00766	J	0.0074	J	0.0451	v	< 0.0252	u
Benzene	1.78E+01	(1)	8.72E+01	(4)	0.00239	v	0.0123	v	0.0149	v	0.2	J	0.047	v	0.0178	v	0.00079	J	< 0.0214	u	0.0159	v	< 0.0004	u	0.2	J	0.018	v	< 0.0233	u	< 0.0048	u	0.026	v	0.00132	J	0.0154	v	0.00091	J	< 0.005	u
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0485	u	< 0.0023	u	< 0.0005	u	< 0.0005	u	< 0.0107	u	< 0.0007	u	< 0.0004	u	< 0.0442	u	< 0.0005	u	< 0.0117	u	< 0.0024	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.0007	u	< 0.025	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0535	u	< 0.0026	u	< 0.0003	u	< 0.0002	u	< 0.0118	u	< 0.0003	u	< 0.0002	u	< 0.0487	u	< 0.0003	u	< 0.0128	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0028	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0526	u	< 0.0025	u	< 0.0005	u	< 0.0005	u	< 0.0116	u	< 0.0006	u	< 0.0004	u	< 0.0479	u	< 0.0005	u	< 0.0126	u	< 0.0026	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0006	u	< 0.0271	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	< 0.0011	u	< 0.0011	u	< 0.0013	u	< 0.1262	u	< 0.0061	u	< 0.0011	u	< 0.001	u	< 0.0279	u	< 0.0014	u	< 0.0009	u	< 0.115	u	< 0.0011	u	0.12	J	0.026	J	< 0.0014	u	< 0.0014	u	< 0.0016	u	< 0.0015	u	0.023	J
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	< 0.0009	u	< 0.0008	u	< 0.001	u	< 0.4705	u	< 0.0226	u	< 0.0009	u	< 0.0008	u	< 0.104	u	< 0.0011	u	< 0.0007	u	< 0.4289	u	< 0.0008	u	< 0.113	u	< 0.0233	u	< 0.0011	u	< 0.0011	u	< 0.0012	u	< 0.0011	u	< 0.0243	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0637	u	< 0.0031	u	< 0.0003	u	< 0.0003	u	< 0.0141	u	< 0.0004	u	< 0.0003	u	< 0.058	u	< 0.0003	u	< 0.0153	u	< 0.0031	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0033	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0503	u	< 0.0024	u	< 0.0002	u	< 0.0002	u	< 0.0111	u	< 0.0002	u	< 0.0002	u	< 0.0459	u	< 0.0002	u	< 0.0121	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0026	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.506	u	< 0.0243	u	< 0.0019	u	< 0.0018	u	< 0.1119	u	< 0.0024	u	< 0.0016	u	< 0.4614	u	< 0.0019	u	< 0.1215	u	< 0.025	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u	< 0.0261	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0681	u	< 0.0033	u	< 0.0004	u	< 0.0004	u	< 0.0151	u	< 0.0005	u	< 0.0003	u	< 0.0621	u	< 0.0004	u	< 0.0164	u	< 0.0034	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0035	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0757	u	< 0.0036	u	< 0.0002	u	< 0.0002	u	< 0.0167	u	< 0.0003	u	< 0.0002	u	< 0.069	u	< 0.0002	u	< 0.0182	u	< 0.0037	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0039	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0827	u	< 0.004	u	< 0.0005	u	< 0.0005	u	< 0.0183	u	< 0.0006	u	< 0.0004	u	< 0.0754	u	< 0.0005	u	< 0.0199	u	< 0.0041	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0043	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.0454	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.01	u	< 0.0024	u	< 0.0016	u	< 0.0414	u	< 0.0019	u	< 0.0109	u	< 0.0022	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u	< 0.0023	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.049	u	< 0.0024	u	< 0.0002	u	< 0.0002	u	< 0.0108	u	< 0.0003	u	< 0.0002	u	< 0.0447	u	< 0.0002	u	< 0.0118	u	< 0.0024	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0025	u
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	< 0.0011	u	< 0.001	u	< 0.0012	u	< 0.0688	u	< 0.0033	u	< 0.0011	u	< 0.001	u	< 0.0152	u	< 0.0013	u	< 0.0009	u	< 0.0628	u	< 0.0011	u	< 0.0165	u	< 0.0034	u	< 0.0014	u	< 0.0013	u	< 0.0016	u	< 0.0014	u	< 0.0036	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')		SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')		SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')		SWMU 10-13 (6-8')	
					1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007		1505057-001		1505057-002		1505057-003		1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003		1505617-004	
					5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015	
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.1644	u	< 0.0079	u	< 0.0008	u	< 0.0007	u	< 0.0364	u	< 0.001	u	< 0.0007	u	< 0.1499	u	< 0.0008	u	< 0.0395	u	< 0.0081	u	< 0.001	u	< 0.001	u	< 0.0011	u	< 0.001	u	< 0.0085	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	0.000502	J	0.00188	v	0.00213	J	1.4	v	0.044	v	0.00285	v	< 0.0003	u	0.04	J	0.00242	v	< 0.0003	u	3.6	v	0.00241	v	0.1	J	0.21	v	0.00371	v	< 0.0004	u	0.00249	J	< 0.0004	u	1.3	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.00038	u	< 0.00035	u	< 0.00044	u	< 0.09078	u	< 0.00435	u	< 0.00038	u	< 0.00035	u	< 0.02007	u	< 0.00047	u	< 0.00032	u	< 0.08276	u	< 0.00037	u	< 0.0218	u	< 0.00448	u	< 0.00048	u	< 0.00047	u	< 0.00055	u	< 0.0005	u	< 0.04684	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	< 0.0004	u	< 0.0004	u	< 0.0005	u	0.52	J	0.012	J	0.000447	J	< 0.0004	u	0.016	J	< 0.0005	u	< 0.0004	u	1.2	v	< 0.0004	u	0.04	J	0.077	v	0.00061	J	< 0.0005	u	< 0.0006	u	< 0.0006	u	0.67	v
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	0.0014	J	0.000891	J	< 0.0009	u	< 0.0925	u	< 0.0044	u	< 0.0008	u	< 0.0007	u	< 0.0204	u	< 0.001	u	< 0.0007	u	< 0.0843	u	< 0.0008	u	< 0.0222	u	< 0.0046	u	< 0.001	u	< 0.001	u	< 0.0012	u	< 0.001	u	< 0.0048	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	0.000637	J	0.000686	J	0.0007	J	< 0.2615	u	< 0.0125	u	< 0.0005	u	0.00044	J	< 0.0578	u	< 0.0006	u	0.00051	J	< 0.2384	u	< 0.0005	u	< 0.0628	u	< 0.0129	u	0.00081	J	< 0.0006	u	< 0.0007	u	0.00069	J	< 0.0135	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	< 0.00063	u	< 0.00058	u	< 0.00071	u	7.8	v	0.14	v	0.000809	J	< 0.00057	u	0.32	v	0.00087	J	< 0.00052	u	11	v	0.000725	J	0.54	v	0.46	v	0.00119	J	< 0.00076	u	< 0.0009	u	< 0.00081	u	3.8	v
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	< 0.0008	u	< 0.0007	u	< 0.0009	u	1.2	J	0.023	J	< 0.0008	u	< 0.0007	u	0.065	J	< 0.001	u	< 0.0007	u	1.4	J	< 0.0008	u	0.063	J	0.098	v	< 0.001	u	< 0.001	u	< 0.0011	u	< 0.001	u	0.58	J
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	< 0.0004	u	< 0.0003	u	< 0.0004	u	0.85	v	0.026	J	0.000428	J	< 0.0003	u	0.052	J	< 0.0004	u	< 0.0003	u	1.8	v	0.000372	J	0.057	J	0.12	v	0.00068	J	< 0.0004	u	< 0.0005	u	< 0.0005	u	0.86	v
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	< 0.0005	u	0.00065	J	0.00079	J	0.51	J	0.011	J	0.000714	J	< 0.0004	u	0.021	J	0.00085	J	< 0.0004	u	0.75	v	0.000688	J	< 0.0224	u	0.051	v	0.00095	J	0.00083	J	0.000964	J	< 0.0006	u	0.36	v
Styrene	7.26E+03	(1)	1.02E+04	(5)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.12	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0265	u	< 0.0004	u	< 0.0003	u	< 0.1094	u	< 0.0003	u	< 0.0288	u	< 0.0059	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0062	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0749	u	< 0.0036	u	< 0.0003	u	< 0.0003	u	< 0.0166	u	< 0.0004	u	< 0.0002	u	< 0.0683	u	< 0.0003	u	< 0.018	u	< 0.0037	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0386	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0566	u	< 0.0027	u	< 0.0004	u	< 0.0003	u	< 0.0125	u	< 0.0005	u	< 0.0003	u	< 0.0516	u	< 0.0004	u	< 0.0136	u	< 0.0028	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0029	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	0.00181	J	0.00801	v	0.00962	v	0.48	J	< 0.0037	u	0.0122	v	0.0008	J	< 0.0172	u	0.0115	v	0.000255	J	5	v	0.0104	v	0.021	J	0.02	J	0.0162	v	0.00101	J	0.0101	v	0.00089	J	0.11	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0425	u	< 0.002	u	< 0.0003	u	< 0.0003	u	< 0.0094	u	< 0.0004	u	< 0.0003	u	< 0.0387	u	< 0.0003	u	< 0.0102	u	< 0.0021	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0022	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.1177	u	< 0.0056	u	< 0.0002	u	< 0.0002	u	< 0.026	u	< 0.0003	u	< 0.0002	u	< 0.1073	u	< 0.0002	u	< 0.0283	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0061	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0637	u	< 0.0031	u	< 0.0004	u	< 0.0003	u	< 0.0141	u	< 0.0005	u	< 0.0003	u	< 0.0581	u	< 0.0004	u	< 0.0153	u	< 0.0031	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0033	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.1973	u	< 0.0095	u	< 0.0004	u	< 0.0004	u	< 0.0436	u	< 0.0005	u	< 0.0003	u	< 0.1799	u	< 0.0004	u	< 0.0474	u	< 0.0098	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0102	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.2615	u	< 0.0125	u	< 0.0002	u	< 0.0002	u	< 0.0578	u	< 0.0003	u	< 0.0002	u	< 0.2384	u	< 0.0002	u	< 0.0628	u	< 0.0129	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0135	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	0.00146	J	0.00622	v	0.00711	v	13	v	0.016	J	0.00872	v	< 0.001	u	0.26	J	0.00807	v	< 0.001	u	29	v	0.00797	v	0.73	v	1.7	v	0.0121	v	< 0.0014	u	0.00583	v	< 0.0015	u	5	v
Semi-volatiles (mg/kg)																																										
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.2417	u	< 0.1213	u	< 0.12	u	< 1.1646	u	< 0.1185	u	< 0.1177	u	< 1.0207	u	< 1.017	u	< 0.1186	u	< 0.2327	u	< 1.2417	u	< 0.1206	u	< 1.1468	u	< 1.2306	u	< 0.1164	u	< 0.1186	u	< 0.1125	u	< 0.1079	u	< 0.1208	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.2259	u	< 0.1134	u	< 0.1121	u	< 1.0882	u	< 0.1107	u	< 0.11	u	< 0.9537	u	< 0.9502	u	< 0.1108	u	< 0.2175	u	< 1.1602	u	< 0.1126	u	< 1.0716	u	< 1.1499	u	< 0.1087	u	< 0.1108	u	< 0.1051	u	< 0.1009	u	< 0.1128	u
1,3-Dichlorobenzene	-	-	-	-	< 0.2097	u	< 0.1053	u	< 0.1041	u	< 1.0104	u	< 0.1028	u	< 0.1021	u	< 0.8856	u	< 0.8824	u	< 0.1029	u	< 0.2019	u	< 1.0774	u	< 0.1046	u	< 0.995	u	< 1.0678	u	< 0.101	u	< 0.1029	u	< 0.0976	u	< 0.0937	u	< 0.1048	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.247	u	< 0.124	u	< 0.1226	u	< 1.1899	u	< 0.1211	u	< 0.1202	u	< 1.0429	u	< 1.0391	u	< 0.1212	u	< 0.2378	u	< 1.2688	u	< 0.1232	u	< 1.1718	u	< 1.2575	u	< 0.1189	u	< 0.1211	u	< 0.1149	u	< 0.1103	u	< 0.1234	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	< 0.2189	u	< 0.1099	u	< 0.1087	u	68	v	0.26	v	< 0.1066	u	< 0.9242	u	1.1	J	< 0.1074	u	< 0.2107	u	17	v	< 0.1092	u	14	v	3.8	v	< 0.1054	u	< 0.1074	u	< 0.1019	u	< 0.0977	u	12	v
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	< 0.2752	u	< 0.1381	u	< 0.1366	u	< 1.3258	u	< 0.1349	u	< 0.134	u	< 1.162	u	< 1.1577	u	< 0.135	u	< 0.265	u	< 1.4136	u	< 0.1372	u	< 1.3056	u	< 1.401	u	< 0.1325	u	< 0.135	u	< 0.1281	u	< 0.1229	u	< 0.1375	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	< 0.273	u	< 0.137	u	< 0.1355	u	< 1.3153	u	< 0.1338	u	< 0.1329	u	< 1.1528	u	< 1.1485	u	< 0.134	u	< 0.2629	u	< 1.4024	u	< 0.1362	u	< 1.2952	u	< 1.3899	u	< 0.1314	u	< 0.1339	u	< 0.127	u	< 0.1219	u	< 0.1364	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	< 0.2361	u	< 0.1185	u	< 0.1172	u	< 1.1377	u	< 0.1158	u	< 0.115	u	< 0.9971	u	< 0.9934	u	< 0.1159	u	< 0.2274	u	< 1.213	u	< 0.1178	u	< 1.1203	u	< 1.2022	u	< 0.1137	u	< 0.1158	u	< 0.1099	u	< 0.1054	u	< 0.118	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	< 0.1856	u	< 0.0932	u	< 0.0921	u	< 0.8942	u	< 0.091	u	< 0.0904	u	< 0.7838	u	< 0.7809	u	< 0.0911	u	< 0.1787	u	< 0.9535	u	< 0.0926	u	< 0.8806	u	< 0.945	u	< 0.0894	u	< 0.091	u	< 0.0864	u	< 0.0829	u	< 0.0927	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	< 0.0981	u	< 0.0492	u	< 0.0487	u	< 0.4727	u	< 0.0481	u	< 0.0478	u	< 0.4143	u	< 0.4128	u	< 0.0481	u	< 0.0945	u	< 0.504	u	< 0.0489	u	< 0.4655	u	< 0.4995	u	< 0.0472	u	< 0.0481	u	< 0.0457	u	< 0.0438	u	< 0.049	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	< 0.2113	u	< 0.106	u	< 0.1049	u	< 1.0178	u	< 0.1036	u	< 0.1028	u	< 0.892	u	< 0.8888	u	< 0.1037	u	< 0.2034	u	< 1.0852	u	< 0.1054	u	< 1.0023	u	< 1.0755	u	< 0.1017	u	< 0.1036	u	< 0.0983	u	< 0.0943	u	< 0.1055	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	< 0.2625	u	< 0.1317	u	< 0.1303	u	< 1.2646	u	< 0.1287	u	< 0.1278	u	< 1.1083	u	< 1.1043	u	< 0.1288	u	< 0.2527	u	< 1.3483	u	< 0.1309	u	< 1.2453	u	< 1.3363	u	< 0.1264	u	< 0.1287	u	< 0.1222	u	< 0.1172	u	< 0.1311	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	< 0.253	u	< 0.127	u	< 0.1256	u	< 1.2189	u	< 0.124	u	< 0.1232	u	< 1.0683	u	< 1.0644	u	< 0.1241	u	< 0.2436	u	< 1.2996	u	< 0.1262	u	< 1.2003	u	< 1.288	u	< 0.1218	u	< 0.1241	u	< 0.1177	u	< 0.113	u	< 0.1264	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	< 0.2204	u	< 0.1106	u	< 0.1094	u	< 1.0617	u	< 0.108	u	< 0.1073	u	< 0.9305	u	< 0.9271	u	< 0.1081	u	< 0.2122	u	< 1.132	u	< 0.1099	u	< 1.0455	u	< 1.1219	u	< 0.1061	u	< 0.1081	u	< 0.1026	u	< 0.0984	u	< 0.1101	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	< 0.2161	u	< 0.1085	u	< 0.1073	u	89	v	0.35	v	< 0.1052	u	< 0.9125	u	1	J	< 0.106	u	< 0.2081	u	25	v	< 0.1078	u	23	v	5.7	v	< 0.104	u	< 0.106	u	< 0.1006	u	< 0.0965	u	21	v
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	< 0.2367	u	< 0.1188	u	< 0.1175	u	< 1.1405	u	< 0.1161	u	< 0.1152	u	< 0.9996	u	< 0.996	u	< 0.1162	u	< 0.2279	u	< 1.2161	u	< 0.1181	u	< 1.1231	u	< 1.2052	u	< 0.114	u	< 0.1161	u	< 0.1102	u	< 0.1057	u	2.2	v
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	< 0.2687	u	< 0.1349	u	< 0.1334	u	< 1.2945	u	< 0.1317	u	< 0.1308	u	< 1.1346	u	< 1.1304	u	< 0.1318	u	< 0.2587	u	< 1.3802	u	< 0.134	u	< 1.2748	u	< 1.368	u	< 0.1294	u	< 0.1318	u	< 0.125	u	< 0.12	u	< 0.1342	u
2-Nitrophenol	-	-	-	-	< 0.2123	u	< 0.1065	u	< 0.1054	u	< 1.0225	u	< 0.1041	u	< 0.1033	u	< 0.8962	u	< 0.8929	u	< 0.1041	u	< 0.2044	u	< 1.0902	u	< 0.1059	u	< 1.0069	u	< 1.0805	u	< 0.1022	u	< 0.1041	u	< 0.0988	u	< 0.0948	u	< 0.106	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	< 0.1818	u	< 0.0913	u	< 0.0903	u	< 0.876	u	< 0.0891	u	< 0.0885	u	< 0.7678	u	< 0.765	u	< 0.0892	u	< 0.1751	u	< 0.934	u	< 0.0907	u	< 0.8627	u	< 0.9257	u	< 0.0875	u	< 0.0892	u	< 0.0846	u	< 0.0812	u	< 0.0908	u
3+4-Methylphenol	-	-	-	-	< 0.2448	u	< 0.1228	u	< 0.1215	u	< 1.1791	u	< 0.12	u	< 0.1191	u	< 1.0334	u	< 1.0296	u	< 0.1201	u	< 0.2356	u	< 1.2572	u	< 0.1221	u	< 1.1611	u	< 1.246	u	< 0.1178	u	< 0.12	u	< 0.1139	u	< 0.1093	u	0.79	v
3-Nitroaniline	-	-	-	-	< 0.2275	u	< 0.1142	u	< 0.1129	u	< 1.0961	u	< 0.1115	u	< 0.1108	u	< 0.9607	u	< 0.9572	u	< 0.1116	u	< 0.2191	u	< 1.1687	u	< 0.1135	u	< 1.0794	u	< 1.1583	u	< 0.1095	u	< 0.1116	u	< 0.1059	u	< 0.1016	u	< 0.1137	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	< 0.1284	u	< 0.0644	u	< 0.0637	u	< 0.6186	u	< 0.0629	u	< 0.0625	u	< 0.5422	u	< 0.5402	u	< 0.063	u	< 0.1236	u	< 0.6596	u	< 0.064	u	< 0.6092	u	< 0.6537	u	< 0.0618	u	< 0.063	u	< 0.0598	u	< 0.0573	u	< 0.0641	u
4-Bromophenyl phenyl ether	-	-	-	-	< 0.2505	u	< 0.1258	u	< 0.1244	u	< 1.207	u	< 0.1228	u	< 0.122	u	< 1.0579	u	< 1.054	u	< 0.1229	u	< 0.2412	u	< 1.287	u	< 0.125	u	< 1.1886	u	< 1.2755	u	< 0.1206	u	< 0.1229	u	< 0.1166	u	< 0.1119	u	< 0.1252	u
4-Chloro-3-methylphenol	-	-	-	-	< 0.2351	u	< 0.118	u	< 0.1167	u	< 1.1327	u	< 0.1153	u	< 0.1145	u	< 0.9928	u	< 0.9892	u	< 0.1154	u	< 0.2264	u	< 1.2077	u	< 0.1173	u	< 1.1155	u	< 1.197	u	< 0.1132	u	< 0.1153	u	< 0.1094	u	< 0.105	u	< 0.1175	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	< 0.2184	u	< 0.1096	u	< 0.1084	u	< 1.0521	u	< 0.1071	u	< 0.1063	u	< 0.9221	u	< 0.9187	u	< 0.1072	u	< 0.2103	u	< 1.1218	u	< 0.1089	u	< 1.0361	u	< 1.1118	u	< 0.1051	u	< 0.1071	u	< 0.1016	u	< 0.0975	u	< 0.1091	u
4-Chlorophenyl phenyl ether	-	-	-	-	< 0.3516	u	< 0.1765	u	< 0.1745	u	< 1.6941	u	< 0.1724	u	< 0.1712	u	< 1.4847	u	< 1.4793	u	< 0.1725	u	< 0.3386	u	< 1.8062	u	< 0.1754	u	< 1.6682	u	< 1.7902	u	< 0.1693	u	< 0.1725	u	< 0.1636	u	< 0.157	u	< 0.1757	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	< 0.2121	u	< 0.1065	u	< 0.1053	u	< 1.0218	u	< 0.104	u	< 0.1033	u	< 0.8956	u	< 0.8923	u	< 0.1041	u	< 0.2042	u	< 1.0895	u	< 0.1058	u	< 1.0063	u	< 1.0798	u	< 0.1021	u	< 0.104	u	< 0.0987	u	< 0.0947	u	< 0.106	u
4-Nitrophenol	-	-	-	-	< 0.2035	u	< 0.1021	u	< 0.101	u	< 0.9802	u	< 0.0997	u	< 0.099	u	< 0.8591	u	< 0.8559	u	< 0.0998	u	< 0.1959	u	< 1.0451	u	< 0.1015	u	< 0.9652	u	< 1.0358	u	< 0.0979	u	< 0.0998	u	< 0.0947	u	< 0.0908	u	< 0.1016	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	< 0.2878	u	< 0.1444	u	< 0.1428	u	< 1.3863	u	< 0.1411	u	< 0.1401	u	< 1.215	u	< 1.2106	u	< 0.1412	u	< 0.2771	u	< 1.4781	u	< 0.1435	u	< 1.3652	u	< 1.465	u	< 0.1385	u	< 0.1411	u	< 0.1339	u	< 0.1285	u	< 0.1438	u
Acenaphthylene	-	-	-	-	< 0.2392	u	< 0.1201	u	< 0.1187	u	< 1.1525	u	< 0.1173	u	< 0.1165	u	< 1.0101	u	< 1.0064	u	< 0.1174	u	< 0.2303	u	< 1.2288	u	< 0.1193	u	< 1.1349	u	< 1.2178	u	< 0.1152	u	< 0.1173	u	< 0.1113	u	< 0.1068	u	< 0.1195	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	< 0.2056	u	< 0.1032	u	< 0.102	u	< 0.9902	u	< 0.1008	u	< 0.1001	u	< 0.8679	u	< 0.8647	u	< 0.1009	u	< 0.1979	u	< 1.0558	u	< 0.1025	u	< 0.9751	u	< 1.0464	u	< 0.0989	u	< 0.1008	u	< 0.0957	u	< 0.0918	u	< 0.1027	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	< 0.2006	u	< 0.1007	u	< 0.0996	u	< 0.9664	u	< 0.0983	u	< 0.0976	u	< 0.847	u	< 0.8439	u	< 0.0984	u	< 0.1931	u	< 1.0304	u	< 0.1	u	< 0.9516	u	< 1.0212	u	< 0.0966	u	< 0.0984	u	< 0.0933	u	< 0.0896	u	< 0.1002	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	< 0.2647	u	< 0.1329	u	< 0.1314	u	< 1.2753	u	< 0.1298	u	< 0.1289	u	< 1.1178	u	< 1.1137	u	< 0.1299	u	< 0.2549	u	< 1.3598	u	< 0.132	u	< 1.2559	u	< 1.3477	u	< 0.1274	u	< 0.1298	u	< 0.1232	u	< 0.1182	u	< 0.1322	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	< 0.1856	u	< 0.0932	u	< 0.0921	u	< 0.8941	u	< 0.091	u	< 0.0904	u	< 0.7837	u	< 0.7808	u	< 0.0911	u	< 0.1787	u	< 0.9534	u	< 0.0926	u	< 0.8805	u	< 0.9449	u	< 0.0893	u	< 0.091	u	< 0.0864	u	< 0.0829	u	< 0.0927	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	< 0.265	u	< 0.133	u	< 0.1315	u	< 1.2767	u	< 0.1299	u	< 0.129	u	< 1.119	u	< 1.1149	u	< 0.13	u	< 0.2552	u	< 1.3613	u	< 0.1322	u	< 1.2573	u	< 1.3492	u	< 0.1276	u	< 0.13	u	< 0.1233	u	< 0.1183	u	< 0.1324	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	< 0.2242	u	< 0.1126	u	< 0.1113	u	< 1.0803	u	< 0.1099	u	< 0.1092	u	< 0.9468	u	< 0.9434	u	< 0.11	u	< 0.2159	u	< 1.1518	u	< 0.1118	u	< 1.0638	u	< 1.1416	u	< 0.1079	u	< 0.11	u	< 0.1044	u	< 0.1001	u	< 0.112	u
Benzo(g,h,i)perylene	-	-	-	-	< 0.2687	u	< 0.1349	u	< 0.1334	u	< 1.2946	u	< 0.1317	u	< 0.1308	u	< 1.1347	u	< 1.1305	u	< 0.1318	u	< 0.2587	u	< 1.3803	u	< 0.134	u	< 1.2749	u	< 1.3681	u	< 0.1294	u	< 0.1318	u	< 0.1251	u	< 0.12	u	< 0.1342	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	< 0.2669	u	< 0.1339	u	< 0.1325	u	< 1.2857	u	< 0.1308	u	< 0.1299	u	< 1.1268	u	< 1.1227	u	< 0.1309	u	< 0.2569	u	< 1.3708	u	< 0.1331	u	< 1.2661	u	< 1.3586	u	< 0.1285	u	< 0.1309	u	< 0.1242	u	< 0.1192	u	< 0.1333	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	< 0.1346	u	< 0.0675	u	< 0.0668	u	< 0.6482	u	< 0.066	u	< 0.0655	u	< 0.5681	u	< 0.5661	u	< 0.066	u	< 0.1295	u	< 0.6912	u	< 0.0671	u	< 0.6383	u	< 0.685	u	< 0.0648	u	< 0.066	u	< 0.0626	u	< 0.0601	u	< 0.0672	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	< 0.2098	u	< 0.1053	u	< 0.1041	u	< 1.0105	u	< 0.1028	u	< 0.1021	u	< 0.8857	u	< 0.8824	u	< 0.1029	u	< 0.202	u	< 1.0774	u	< 0.1046	u	< 0.9951	u	< 1.0679	u	< 0.101	u	< 0.1029	u	< 0.0976	u	< 0.0937	u	< 0.1048	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	< 0.2254	u	< 0.1131	u	< 0.1119	u	< 1.0858	u	< 0.1105	u	< 0.1097	u	< 0.9516	u	< 0.9482	u	< 0.1106	u	< 0.217	u	< 1.1577	u	< 0.1124	u	< 1.0692	u	< 1.1474	u	< 0.1085	u	< 0.1105	u	< 0.1049	u	< 0.1006	u	< 0.1126	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	< 0.2333	u	< 0.1171	u	< 0.1158	u	< 1.1241	u	< 0.1144	u	< 0.1136	u	< 0.9852	u	< 0.9816	u	< 0.1145	u	< 0.2247	u	< 1.1986	u	< 0.1164	u	< 1.107	u	< 1.1879	u	< 0.1123	u	< 0.1144	u	< 0.1086	u	< 0.1042	u	< 0.1166	u
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	< 0.1804	u	< 0.0905	u	< 0.0895	u	< 0.8691	u	< 0.0884	u	< 0.0878	u	< 0.7617	u	< 0.759	u	< 0.0885	u	< 0.1737	u	< 0.9267	u	< 0.09	u	< 0.8559	u	< 0.9184	u	< 0.0868	u	< 0.0885	u	< 0.084	u	< 0.0806	u	< 0.0901	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	< 0.2653	u	< 0.1332	u	< 0.1317	u	< 1.2781	u	< 0.1301	u	< 0.1292	u	1.5	J	< 1.1161	u	< 0.1302	u	< 0.2554	u	< 1.3628	u	< 0.1323	u	< 1.2586	u	< 1.3506	u	< 0.1277	u	< 0.1301	u	< 0.1235	u	< 0.1185	u	< 0.1325	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')		SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')		SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')		SWMU 10-13 (6-8')	
					1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007		1505057-001		1505057-002		1505057-003		1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003		1505617-004	
					5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015	
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	< 0.2883	u	< 0.1447	u	< 0.1431	u	< 1.3889	u	< 0.1413	u	< 0.1403	u	< 1.2173	u	< 1.2128	u	< 0.1414	u	< 0.2776	u	< 1.4808	u	< 0.1438	u	< 1.3677	u	< 1.4677	u	< 0.1388	u	< 0.1414	u	< 0.1342	u	< 0.1287	u	< 0.144	u
Carbazole	-	-	-	-	< 0.2199	u	< 0.1104	u	< 0.1092	u	< 1.0596	u	< 0.1078	u	< 0.1071	u	< 0.9286	u	< 0.9253	u	< 0.1079	u	< 0.2118	u	< 1.1297	u	< 0.1097	u	< 1.0434	u	< 1.1197	u	< 0.1059	u	< 0.1079	u	< 0.1023	u	< 0.0982	u	< 0.1099	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	< 0.2371	u	< 0.119	u	< 0.1177	u	< 1.1424	u	< 0.1162	u	< 0.1154	u	< 1.0012	u	< 0.9976	u	< 0.1163	u	< 0.2283	u	< 1.218	u	< 0.1183	u	< 1.1249	u	< 1.2072	u	< 0.1141	u	< 0.1163	u	< 0.1103	u	< 0.1059	u	< 0.1185	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	< 0.2558	u	< 0.1284	u	< 0.127	u	< 1.2325	u	< 0.1254	u	< 0.1245	u	< 1.0802	u	< 1.0763	u	< 0.1255	u	< 0.2463	u	< 1.3141	u	< 0.1276	u	< 1.2137	u	< 1.3025	u	< 0.1232	u	< 0.1255	u	< 0.1191	u	< 0.1142	u	< 0.1278	u
Dibenzofuran	-	-	-	-	< 0.2526	u	< 0.1268	u	< 0.1254	u	< 1.2167	u	< 0.1238	u	< 0.1229	u	< 1.0664	u	< 1.0625	u	< 0.1239	u	< 0.2432	u	< 1.2973	u	< 0.126	u	< 1.1981	u	< 1.2857	u	< 0.1216	u	< 0.1239	u	< 0.1175	u	< 0.1128	u	< 0.1262	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	< 0.268	u	< 0.1345	u	< 0.133	u	< 1.2911	u	< 0.1314	u	< 0.1305	u	< 1.1316	u	< 1.1275	u	< 0.1315	u	< 0.258	u	< 1.3766	u	< 0.1337	u	< 1.2714	u	< 1.3644	u	< 0.129	u	< 0.1314	u	< 0.1247	u	< 0.1197	u	< 0.1339	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	< 0.2173	u	< 0.1091	u	< 0.1079	u	< 1.047	u	< 0.1065	u	< 0.1058	u	< 0.9176	u	< 0.9143	u	< 0.1066	u	< 0.2092	u	< 1.1163	u	< 0.1084	u	< 1.031	u	< 1.1064	u	< 0.1046	u	< 0.1066	u	< 0.1011	u	< 0.097	u	< 0.1086	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	< 0.2671	u	< 0.134	u	< 0.1326	u	< 1.2866	u	< 0.1309	u	< 0.13	u	< 1.1276	u	< 1.1235	u	< 0.131	u	< 0.2571	u	< 1.3718	u	< 0.1332	u	< 1.267	u	< 1.3596	u	< 0.1286	u	< 0.131	u	< 0.1243	u	< 0.1192	u	< 0.1334	u
Di-n-octyl phthalate	-	-	-	-	< 0.2629	u	< 0.1319	u	< 0.1305	u	< 1.2665	u	< 0.1289	u	< 0.128	u	< 1.11	u	< 1.1059	u	< 0.129	u	< 0.2531	u	< 1.3503	u	< 0.1311	u	< 1.2472	u	< 1.3383	u	< 0.1266	u	< 0.1289	u	< 0.1223	u	< 0.1174	u	< 0.1313	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	< 0.2866	u	< 0.1438	u	< 0.1422	u	< 1.3805	u	< 0.1405	u	< 0.1395	u	< 1.2099	u	< 1.2055	u	< 0.1406	u	< 0.2759	u	< 1.4719	u	< 0.1429	u	< 1.3595	u	< 1.4588	u	< 0.1379	u	< 0.1405	u	< 0.1334	u	< 0.128	u	< 0.1432	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	< 0.3215	u	< 0.1614	u	< 0.1596	u	8.1	v	< 0.1576	u	< 0.1565	u	< 1.3574	u	< 1.3524	u	< 0.1577	u	< 0.3095	u	2.2	J	< 0.1603	u	1.8	J	< 1.6366	u	< 0.1548	u	< 0.1577	u	< 0.1496	u	< 0.1435	u	1.1	v
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	< 0.2229	u	< 0.1119	u	< 0.1106	u	< 1.0737	u	< 0.1093	u	< 0.1085	u	< 0.9411	u	< 0.9376	u	< 0.1094	u	< 0.2146	u	< 1.1448	u	< 0.1112	u	< 1.0574	u	< 1.1347	u	< 0.1073	u	< 0.1093	u	< 0.1037	u	< 0.0995	u	< 0.1113	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.2336	u	< 0.1173	u	< 0.116	u	< 1.1255	u	< 0.1145	u	< 0.1137	u	< 0.9865	u	< 0.9829	u	< 0.1146	u	< 0.2249	u	< 1.2001	u	< 0.1165	u	< 1.1084	u	< 1.1894	u	< 0.1125	u	< 0.1146	u	< 0.1087	u	< 0.1043	u	< 0.1167	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	< 0.1638	u	< 0.0822	u	< 0.0813	u	< 0.7891	u	< 0.0803	u	< 0.0797	u	< 0.6916	u	< 0.6891	u	< 0.0804	u	< 0.1577	u	< 0.8413	u	< 0.0817	u	< 0.777	u	< 0.8339	u	< 0.0788	u	< 0.0803	u	< 0.0762	u	< 0.0731	u	< 0.0818	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	< 0.2102	u	< 0.1055	u	< 0.1043	u	< 1.0127	u	< 0.1031	u	< 0.1023	u	< 0.8875	u	< 0.8843	u	< 0.1031	u	< 0.2024	u	< 1.0797	u	< 0.1048	u	< 0.9972	u	< 1.0701	u	< 0.1012	u	< 0.1031	u	< 0.0978	u	< 0.0939	u	< 0.105	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	< 0.2684	u	< 0.1347	u	< 0.1332	u	< 1.2929	u	< 0.1316	u	< 0.1306	u	< 1.1331	u	< 1.129	u	< 0.1317	u	< 0.2584	u	< 1.3785	u	< 0.1338	u	< 1.2731	u	< 1.3662	u	< 0.1292	u	< 0.1316	u	< 0.1249	u	< 0.1198	u	< 0.1341	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	< 0.2247	u	< 0.1128	u	< 0.1115	u	18	v	0.15	J	< 0.1094	u	< 0.9487	u	< 0.9453	u	< 0.1102	u	< 0.2163	u	5.9	v	< 0.1121	u	5.3	v	1.2	J	< 0.1082	u	< 0.1102	u	< 0.1046	u	< 0.1003	u	3.9	v
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	< 0.2431	u	< 0.122	u	< 0.1207	u	< 1.1713	u	< 0.1192	u	< 0.1184	u	< 1.0266	u	< 1.0228	u	< 0.1193	u	< 0.2341	u	< 1.2489	u	< 0.1213	u	< 1.1534	u	< 1.2378	u	< 0.117	u	< 0.1192	u	< 0.1131	u	< 0.1086	u	< 0.1215	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	< 0.2448	u	< 0.1229	u	< 0.1215	u	< 1.1792	u	< 0.12	u	< 0.1192	u	< 1.0335	u	< 1.0297	u	< 0.1201	u	< 0.2357	u	< 1.2573	u	< 0.1221	u	< 1.1612	u	< 1.2461	u	< 0.1178	u	< 0.12	u	< 0.1139	u	< 0.1093	u	< 0.1223	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	< 0.2114	u	< 0.1061	u	< 0.1049	u	< 1.0185	u	< 0.1036	u	< 0.1029	u	< 0.8927	u	< 0.8894	u	< 0.1037	u	< 0.2036	u	< 1.086	u	< 0.1054	u	< 1.003	u	< 1.0763	u	< 0.1018	u	< 0.1037	u	< 0.0984	u	< 0.0944	u	< 0.1056	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	< 0.1474	u	< 0.074	u	< 0.0732	u	< 0.7103	u	< 0.0723	u	< 0.0718	u	< 0.6225	u	< 0.6203	u	< 0.0723	u	< 0.142	u	< 0.7573	u	< 0.0735	u	< 0.6995	u	< 0.7506	u	< 0.071	u	< 0.0723	u	< 0.0686	u	< 0.0658	u	< 0.0737	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	< 0.247	u	< 0.124	u	< 0.1226	u	15	v	< 0.1211	u	< 0.1203	u	< 1.0431	u	< 1.0393	u	< 0.1212	u	< 0.2379	u	4.1	v	< 0.1232	u	3.6	v	< 1.2577	u	< 0.1189	u	< 0.1212	u	< 0.115	u	< 0.1103	u	2.3	v
Phenol	1.83E+04	(1)	7.74E+04	(5)	< 0.2116	u	< 0.1062	u	< 0.105	u	< 1.0196	u	< 0.1038	u	< 0.103	u	< 0.8936	u	< 0.8903	u	< 0.1038	u	< 0.2038	u	< 1.0871	u	< 0.1055	u	< 1.004	u	< 1.0774	u	< 0.1019	u	< 0.1038	u	< 0.0985	u	< 0.0945	u	0.91	v
Pyrene	1.74E+03	(1)	7.53E+03	(5)	< 0.3048	u	< 0.153	u	< 0.1513	u	< 1.4683	u	< 0.1494	u	< 0.1484	u	< 1.2868	u	< 1.2822	u	< 0.1495	u	< 0.2934	u	< 1.5655	u	< 0.152	u	< 1.4459	u	< 1.5516	u	< 0.1467	u	< 0.1495	u	< 0.1418	u	< 0.1361	u	< 0.1523	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	< 0.1984	u	< 0.0996	u	< 0.0985	u	< 0.956	u	< 0.0973	u	< 0.0966	u	< 0.8378	u	< 0.8348	u	< 0.0974	u	< 0.191	u	< 1.0193	u	< 0.099	u	< 0.9414	u	< 1.0102	u	< 0.0955	u	< 0.0973	u	< 0.0923	u	< 0.0886	u	< 0.0991	u
Total Petroleum Hydrocarbons (mg/kg)																																										
Gasoline Range Organics (GRO)	-		-		< 1	u	< 1	u	< 1	u	670	v	10	v	< 1	u	< 1	u	12	J	< 1	u	< 1	u	560	v	< 1	u	40	v	68	v	< 1	u	< 1	u	2.4	J	< 1	u	320	v
Diesel Range Organics (DRO)	1.00E+03	(9)	3.80E+03	(9)	39	v	< 6	u	< 5	u	**9700**	v	25	v	< 6.3	u	210	v	300	v	< 6.2	u	59	v	**8900**	v	< 5	u	**3800**	v	870	v	< 6.4	u	< 5	u	< 6	u	< 5	u	**2300**	v
Motor Oil Range Organics (MRO)	1.00E+03	(9)	3.80E+03	(9)	< 49	u	< 50	u	< 49	u	**2000**	v	< 56	u	< 57	u	170	v	120	v	< 56	u	98	v	**1600**	v	< 50	u	680	v	280	v	< 58	u	< 50	u	< 50	u	< 48	u	< 498	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (July
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
() NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels9
Bold with yellow highlight value exceeds Residential Screening Level
* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003
v = reportable detection above the Practical quantitation limit (PQL)
u - result is not detected at method detection limit (MDL)
j - estimated result at concentration above MDL but less than PQL

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')		SWMU 10-16 (8-9')		SWMU 10-17 (6-8')		SWMU 10-18 (2-2.5')		SWMU 10-18 (8-10')		SWMU 10-18 (18-20')		SWMU 10-19 (2-2.5')		SWMU 10-19 (12-14')		SWMU 10-19 (18-20')		SWMU 10-20 (2-2.5')		SWMU 10-20 (8-10')		SWMU 10-20 (10-12')	
					1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002		1505705-003		1505617-009		1605874-001		1605874-002		1605874-003		1605875-005		1605875-006		1605875-007		1605875-008		1605875-001		1605875-002	
					5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/16/2016		5/16/2016		5/16/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016	
Metals (mg/kg)																																										
Antimony	3.13E+01	(1)	1.42E+02	(5)	< 2.8483	u	< 3.0545	u	< 7.0836	u	< 1.6215	u	< 1.4891	u	< 2.8183	u	< 1.4809	u	< 1.4396	u	< 1.4877	u	< 3.0564	u	2.7	J	< 2.8	u	2.9	J	4	v	< 6.8559	u	3.2	v	2.7	J	2.8	J	3.7	v
Arsenic	4.25E+00	(1)	2.15E+01	(4)	1.2	J	0.87	J	1.1	J	1.1	J	1.3	J	2.1	J	1.8	J	1.4	J	1.3	J	1.5	J	1.8	J	2.2	J	2	J	1.9	J	< 4.2233	u	3	v	**5.4**	v	3.9	v	1.9	J
Barium	1.56E+04	(1)	4.35E+03	(5)	110	v	160	v	220	v	52	v	120	v	850	v	500	v	430	v	55	v	200	v	130	v	170	v	1000	v	160	v	830	v	480	v	490	v	410	v	250	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.1	v	0.78	v	0.79	v	1	v	1	v	1	v	0.79	v	0.73	v	0.78	v	1	v	1.1	v	1.1	v	0.86	v	1.2	v	1.1	v	1	v	0.77	v	1.2	v	1.1	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	< 0.0301	u	< 0.0322	u	< 0.0299	u	< 0.0342	u	< 0.0314	u	< 0.0297	u	< 0.0313	u	< 0.0304	u	< 0.0314	u	< 0.0323	u	< 0.0757	u	< 0.15	u	< 0.074	u	< 0.0759	u	< 0.3668	u	< 0.071	u	< 0.076	u	< 0.079	u	< 0.081	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	15	v	7	v	8.9	v	9.2	v	9.1	v	13	v	9.3	v	8.8	v	10	v	11	v	8.8	v	11	v	16	v	9.3	v	12	v	13	v	**150**	v	15	v	10	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	< 2.1997	u	< 2.2523	u	< 2.2093	u	< 2.3898	u	< 2.3405	u	< 2.1714	u	< 0.7191	u	< 0.7103	u	< 0.7148	u	< 2.2901	u	< 0.64	u	< 0.64	u	< 0.64	u	< 0.64	u	< 0.64	u	< 0.64	u	1.2	J	< 0.64	u	< 0.64	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	6.3	v	4.5	v	5	v	4.7	v	4.6	v	7.4	v	4.4	v	4.2	v	5.7	v	5.3	v	4.7	v	6.4	v	8.3	v	5.2	v	6.5	v	7.9	v	4.9	v	5.6	v	5.6	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	< 0.275	u	< 0.2815	u	< 0.2762	u	< 0.2987	u	< 0.2926	u	< 0.2714	u	< 0.0438	u	< 0.0433	u	< 0.0436	u	< 0.2863	u	0.08	J	0.098	J	0.059	J	< 0.039	u	< 0.039	u	0.04	J	1.6	v	1.1	v	3.9	v
Iron	5.50E+04	(2)	8.20E+05	(6)	23000	v	11000	v	15000	v	15000	v	17000	v	20000	v	15000	v	15000	v	17000	v	16000	v	20000	v	15000	v	19000	v	18000	v	21000	v	21000	v	16000	v	22000	v	21000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.3	v	3.6	v	3.6	v	5.1	v	3.7	v	1.8	v	2.9	v	3	v	3.3	v	4.4	v	5.2	v	4.9	v	2.6	v	5.1	v	5.7	v	3.5	v	21	v	2.8	v	6	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	430	v	430	v	410	v	490	v	200	v	980	v	460	v	240	v	810	v	210	v	200	v	700	v	690	v	280	v	1200	v	410	v	520	v	370	v	190	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	< 0.0031	u	0.0046	J	0.0032	J	< 0.0033	u	< 0.0032	u	< 0.0031	u	0.0048	J	0.0037	J	0.0054	J	< 0.0031	u	0.0044	J	0.0052	J	0.0011	J	0.002	J	0.0019	J	0.00081	J	2	v	0.23	v	0.0041	J
Nickel	1.56E+03	(1)	6.19E+03	(5)	15	v	7.1	v	11	v	8.7	v	8.3	v	15	v	7.7	v	7.2	v	10	v	9.6	v	8.7	v	12	v	15	v	9.8	v	15	v	15	v	12	v	11	v	10	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	< 1.6583	u	< 1.7784	u	< 1.6497	u	< 1.8882	u	< 1.734	u	< 1.6409	u	< 1.7245	u	< 1.6763	u	< 1.7324	u	< 1.7795	u	< 1.3042	u	< 2.6	u	< 1.3	u	< 1.3064	u	< 6.3156	u	< 1.219	u	< 1.3049	u	< 1.3674	u	< 1.3864	u
Silver	3.91E+02	(1)	1.77E+03	(5)	< 0.0322	u	< 0.0346	u	< 0.0321	u	< 0.0367	u	< 0.0337	u	< 0.0319	u	< 0.0335	u	< 0.0326	u	< 0.0337	u	< 0.0346	u	< 0.0379	u	< 0.074	u	< 0.037	u	< 0.038	u	< 0.1836	u	< 0.035	u	< 0.038	u	< 0.04	u	< 0.04	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	15	v	13	v	7.3	v	17	v	15	v	21	v	21	v	22	v	20	v	19	v	17	v	19	v	21	v	17	v	14	J	13	v	23	v	26	v	19	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	21	v	14	v	16	v	15	v	15	v	23	v	15	v	14	v	18	v	17	v	15	v	21	v	28	v	17	v	21	v	25	v	390	v	23	v	18	v
Volatiles (mg/kg)																																										
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	< 0.0004	u	< 0.0023	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.052	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0162	u	< 0.0021	u	< 0.0046	u	< 0.1643	u	< 0.1571	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	< 0.0003	u	< 0.0043	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0964	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0103	u	< 0.0021	u	< 0.0029	u	< 0.1048	u	< 0.1002	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	< 0.0005	u	< 0.0034	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0769	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0273	u	< 0.0021	u	< 0.0077	u	< 0.2782	u	< 0.2661	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	< 0.0023	u	< 0.0034	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u	< 0.0018	u	< 0.0763	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0199	u	< 0.0021	u	< 0.0056	u	< 0.2023	u	< 0.1935	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	< 0.0005	u	< 0.0113	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.2539	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0091	u	< 0.0021	u	< 0.0026	u	< 0.0928	u	< 0.0887	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	< 0.0004	u	< 0.002	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0437	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0553	u	< 0.0003	u	< 0.0156	u	< 0.5622	u	< 0.5378	u
1,1-Dichloropropene	-	-	-	-	< 0.0004	u	< 0.0042	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0945	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0134	u	< 0.0021	u	< 0.0038	u	< 0.1362	u	< 0.1302	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	< 0.0008	u	< 0.006	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.1355	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0252	u	< 0.0005	u	< 0.0071	u	< 0.2568	u	< 0.2457	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	< 0.0008	u	< 0.0048	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.1065	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0292	u	< 0.0021	u	< 0.0082	u	< 0.2969	u	< 0.284	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.00084	u	< 0.00522	u	< 0.00082	u	< 0.00071	u	< 0.00064	u	< 0.00083	u	< 0.00077	u	< 0.00071	u	< 0.00067	u	< 0.11712	u	< 0.0007	u	< 0.0005	u	< 0.0007	u	< 0.0008	u	< 0.018	u	< 0.0006	u	< 0.0051	u	< 0.1836	u	< 0.1756	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	0.0023	v	< 0.0014	u	0.00376	v	< 0.0005	u	< 0.0004	u	0.00497	v	< 0.0005	u	< 0.0005	u	0.00269	v	27	v	< 0.0004	u	0.0006	J	0.0012	J	< 0.0004	u	3.4	v	0.0013	J	< 0.0035	u	25	v	13	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	< 0.0007	u	< 0.0049	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.109	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0517	u	< 0.0002	u	< 0.0146	u	< 0.5258	u	< 0.5029	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0506	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.012	u	< 0.0021	u	< 0.0034	u	< 0.1221	u	< 0.1168	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.0005	u	< 0.0017	u	< 0.00049	u	< 0.00042	u	< 0.00037	u	< 0.00049	u	< 0.00045	u	< 0.00042	u	< 0.00039	u	< 0.03828	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0147	u	< 0.0003	u	< 0.0042	u	< 0.1498	u	< 0.1433	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	< 0.0006	u	< 0.0113	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.2539	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.044	u	< 0.0021	u	< 0.0124	u	< 0.4476	u	< 0.4281	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	< 0.0005	u	< 0.0016	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0355	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0142	u	< 0.0021	u	< 0.004	u	< 0.144	u	< 0.1377	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	0.00154	J	< 0.0019	u	0.00233	v	< 0.0003	u	< 0.0003	u	0.00318	v	< 0.0004	u	< 0.0003	u	0.0017	J	10	v	< 0.0004	u	0.0004	J	0.0007	J	< 0.0004	u	1.4	v	0.0008	J	< 0.0035	u	8.5	v	4.6	v
1,3-Dichlorobenzene	-	-	-	-	< 0.00038	u	< 0.00333	u	< 0.00037	u	< 0.00032	u	< 0.00028	u	< 0.00037	u	< 0.00035	u	< 0.00032	u	< 0.0003	u	< 0.07473	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0138	u	< 0.0004	u	< 0.0039	u	< 0.1408	u	< 0.1346	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	< 0.0004	u	< 0.0039	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0874	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0191	u	< 0.0021	u	< 0.0054	u	< 0.1948	u	< 0.1863	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.00035	u	< 0.00352	u	< 0.00034	u	< 0.0003	u	< 0.00026	u	< 0.00034	u	< 0.00032	u	< 0.00029	u	< 0.00028	u	< 0.07905	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0209	u	< 0.0004	u	< 0.0059	u	< 0.2127	u	< 0.2035	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	< 0.00088	u	< 0.01699	u	< 0.00086	u	< 0.00075	u	< 0.00067	u	< 0.00087	u	< 0.00081	u	< 0.00075	u	< 0.0007	u	48	v	< 0.0003	u	< 0.0002	u	0.0003	J	< 0.0003	u	7.2	v	0.0014	J	< 0.0106	u	41	v	25	v
2,2-Dichloropropane	-	-	-	-	< 0.0004	u	< 0.0041	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0924	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0097	u	< 0.0003	u	< 0.0027	u	< 0.0983	u	< 0.094	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	0.00181	J	< 0.0182	u	< 0.0007	u	< 0.0006	u	0.00114	J	0.00227	J	0.00304	J	0.00146	J	0.00173	J	< 0.4081	u	< 0.0008	u	< 0.0006	u	< 0.0008	u	< 0.0009	u	< 0.0964	u	< 0.0008	u	< 0.0272	u	< 0.9809	u	< 0.9383	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	< 0.0004	u	< 0.0032	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0717	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0124	u	< 0.0004	u	< 0.0035	u	< 0.1266	u	< 0.1211	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	< 0.0005	u	< 0.007	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	0.000787	J	0.000669	J	< 0.0004	u	< 0.1561	u	< 0.0006	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0918	u	< 0.0005	u	< 0.0259	u	< 0.9341	u	< 0.8934	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	< 0.00088	u	< 0.01863	u	< 0.00086	u	< 0.00074	u	< 0.00066	u	< 0.00086	u	< 0.0008	u	< 0.00074	u	< 0.0007	u	87	v	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0007	u	13	v	0.0017	J	< 0.0102	u	73	v	42	v
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	< 0.0004	u	< 0.0021	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.048	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0149	u	< 0.0003	u	< 0.0042	u	< 0.1518	u	< 0.1452	u
4-Isopropyltoluene	-	-	-	-	< 0.0009	u	< 0.002	u	< 0.0009	u	< 0.0007	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	1.6	v	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	0.35	v	< 0.0004	u	< 0.0043	u	0.96	J	0.41	J
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	< 0.001	u	< 0.0049	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.1101	u	< 0.0044	u	< 0.0035	u	< 0.0043	u	< 0.005	u	< 0.0492	u	< 0.0042	u	< 0.0139	u	< 0.5002	u	< 0.4785	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	0.00217	J	0.054	J	0.00282	J	0.00666	J	0.0032	J	0.00238	J	0.0254	v	0.00651	J	0.00313	J	< 0.4733	u	0.009	J	0.0072	J	0.0078	J	0.0121	J	< 0.2183	u	0.0018	J	< 0.0615	u	< 2.2209	u	< 2.1243	u
Benzene	1.78E+01	(1)	8.72E+01	(4)	0.0194	v	< 0.0042	u	0.0224	v	0.00119	J	0.00144	J	0.0292	v	0.00112	J	0.00221	v	0.0176	v	1.9	v	< 0.0022	u	0.007	v	0.0102	v	< 0.0025	u	< 0.0675	u	0.0083	v	< 0.019	u	3.7	v	2.2	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	< 0.0006	u	< 0.0021	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0471	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0136	u	< 0.0002	u	< 0.0038	u	< 0.1384	u	< 0.1323	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0519	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0098	u	< 0.0021	u	< 0.0028	u	< 0.1	u	< 0.0957	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	< 0.0006	u	< 0.0023	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.051	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0206	u	< 0.0021	u	< 0.0058	u	< 0.2091	u	< 0.2	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	< 0.0013	u	0.023	J	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0011	u	< 0.0011	u	< 0.1225	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0622	u	< 0.0004	u	< 0.0175	u	< 0.6324	u	< 0.6049	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	< 0.001	u	< 0.0204	u	< 0.001	u	0.00097	J	< 0.0008	u	< 0.001	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.4567	u	< 0.0008	u	< 0.0006	u	< 0.0008	u	< 0.0009	u	< 0.0557	u	< 0.0008	u	< 0.0157	u	< 0.5667	u	< 0.5421	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	< 0.0004	u	< 0.0028	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0618	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0111	u	< 0.0021	u	< 0.0031	u	< 0.1127	u	< 0.1078	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	< 0.0002	u	< 0.0022	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0489	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0137	u	< 0.0002	u	< 0.0039	u	< 0.1397	u	< 0.1337	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	< 0.0023	u	< 0.0219	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u	< 0.0018	u	< 0.4913	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0337	u	< 0.0004	u	< 0.0095	u	< 0.3426	u	< 0.3277	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	< 0.0005	u	< 0.003	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0662	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0127	u	< 0.0021	u	< 0.0036	u	< 0.1295	u	< 0.1239	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	< 0.0003	u	< 0.0033	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0735	u	< 0.0006	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.015	u	< 0.0005	u	< 0.0042	u	< 0.1528	u	< 0.1462	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	< 0.0006	u	< 0.0036	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0803	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0098	u	< 0.0021	u	< 0.0028	u	< 0.0998	u	< 0.0955	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0023	u	< 0.002	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u	< 0.0018	u	< 0.044	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0156	u	< 0.0021	u	< 0.0044	u	< 0.1583	u	< 0.1514	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	< 0.0003	u	< 0.0021	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0476	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0152	u	< 0.0021	u	< 0.0043	u	< 0.1551	u	< 0.1483	u
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	< 0.0013	u	< 0.003	u	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0011	u	< 0.001	u	< 0.0668	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0146	u	< 0.0021	u	< 0.0041	u	< 0.1487	u	< 0.1422	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')		SWMU 10-16 (8-9')		SWMU 10-17 (6-8')		SWMU 10-18 (2-2.5')		SWMU 10-18 (8-10')		SWMU 10-18 (18-20')		SWMU 10-19 (2-2.5')		SWMU 10-19 (12-14')		SWMU 10-19 (18-20')		SWMU 10-20 (2-2.5')		SWMU 10-20 (8-10')		SWMU 10-20 (10-12')	
					1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002		1505705-003		1505617-009		1605874-001		1605874-002		1605874-003		1605875-005		1605875-006		1605875-007		1605875-008		1605875-001		1605875-002	
					5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/16/2016		5/16/2016		5/16/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016	
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	< 0.0009	u	< 0.0071	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.1596	u	< 0.0013	u	< 0.001	u	< 0.0013	u	< 0.0015	u	< 0.0522	u	< 0.0012	u	< 0.0147	u	< 0.5311	u	< 0.508	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	0.00216	J	< 0.0026	u	0.00331	v	0.00035	J	0.000367	J	0.00472	v	< 0.0003	u	0.000401	J	0.00347	v	11	v	< 0.0003	u	0.001	J	0.0016	J	< 0.0003	u	0.29	v	0.0014	J	< 0.0039	u	9.6	v	4.5	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.00045	u	< 0.00393	u	< 0.00044	u	< 0.00038	u	< 0.00034	u	< 0.00044	u	< 0.00041	u	< 0.00038	u	< 0.00036	u	< 0.08814	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0206	u	< 0.0005	u	< 0.0058	u	< 0.2099	u	< 0.2008	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	< 0.0005	u	< 0.0024	u	0.000543	J	< 0.0004	u	< 0.0004	u	0.000689	J	< 0.0005	u	< 0.0004	u	0.000539	J	3.1	v	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	0.14	J	< 0.0003	u	< 0.0041	u	2	v	0.92	J
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	< 0.0009	u	< 0.004	u	< 0.0009	u	0.00478	v	0.00936	v	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.0898	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.053	u	< 0.0004	u	< 0.0149	u	< 0.5394	u	< 0.516	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	0.000655	J	< 0.0113	u	< 0.0005	u	0.0005	J	< 0.0004	u	< 0.0005	u	< 0.0005	u	0.000506	J	0.000611	J	< 0.2539	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	0.05	J	< 0.0021	u	< 0.0137	u	0.51	J	0.5	J
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	0.000791	J	< 0.00674	u	0.00101	J	< 0.00062	u	< 0.00055	u	0.00109	J	< 0.00067	u	< 0.00062	u	0.000845	J	20	v	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	2.3	v	< 0.0021	u	< 0.0074	u	24	v	12	v
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	< 0.0009	u	< 0.0024	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	2.8	v	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	0.27	J	< 0.0005	u	< 0.0042	u	1.9	J	0.97	J
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	< 0.0004	u	< 0.0021	u	0.000587	J	< 0.0004	u	< 0.0003	u	0.000889	J	< 0.0004	u	< 0.0004	u	0.000494	J	5.2	v	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	0.28	v	0.0004	J	< 0.0037	u	4.2	v	1.9	v
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	0.000813	J	0.0097	J	0.000853	J	0.00063	J	0.000564	J	0.000889	J	< 0.0005	u	< 0.0005	u	0.000683	J	1.8	v	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	0.17	v	< 0.0004	u	< 0.0066	u	1.1	J	0.49	J
Styrene	7.26E+03	(1)	1.02E+04	(5)	< 0.0004	u	< 0.0052	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.1165	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0151	u	< 0.0003	u	< 0.0042	u	< 0.1533	u	< 0.1466	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	< 0.0003	u	< 0.0032	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0727	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.014	u	< 0.0003	u	< 0.0039	u	< 0.1423	u	< 0.1361	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	< 0.0004	u	< 0.0025	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.055	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.014	u	< 0.0003	u	< 0.0039	u	< 0.1424	u	< 0.1362	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	0.00936	v	< 0.0034	u	0.0147	v	0.00109	J	0.0012	J	0.0204	v	0.00104	J	0.00151	J	0.0135	v	34	v	0.001	J	0.0055	v	0.0076	v	0.0011	J	0.16	J	0.0066	v	< 0.0028	u	36	v	18	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	< 0.0004	u	< 0.0018	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0412	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0472	u	< 0.0002	u	< 0.0133	u	< 0.4805	u	< 0.4596	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0003	u	< 0.0051	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.1143	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0247	u	< 0.0003	u	< 0.007	u	< 0.2512	u	< 0.2403	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	< 0.0004	u	< 0.0028	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0618	u	< 0.0022	u	< 0.0017	u	< 0.0022	u	< 0.0025	u	< 0.0181	u	< 0.0021	u	< 0.0051	u	< 0.184	u	< 0.176	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	< 0.0005	u	< 0.0086	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.1916	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0126	u	< 0.0003	u	< 0.0036	u	< 0.1283	u	< 0.1228	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	< 0.0003	u	< 0.0113	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.2539	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0007	u	< 0.0138	u	< 0.0006	u	< 0.0039	u	< 0.1404	u	< 0.1343	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	0.00769	v	< 0.0079	u	0.0115	v	0.00141	J	0.00123	J	0.0155	v	< 0.0012	u	< 0.0011	u	0.00946	v	86	v	< 0.0009	u	0.0027	v	0.0045	v	< 0.001	u	5.9	v	0.0044	v	< 0.009	u	72	v	34	v
Semi-volatiles (mg/kg)																																								
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.1121	u	< 0.1148	u	< 0.1127	u	< 0.1216	u	< 0.12	u	< 0.1103	u	< 0.1145	u	< 0.1129	u	< 0.1144	u	< 1.1687	u	< 0.1311	u	< 0.1267	u	< 0.1244	u	< 0.13	u	< 0.12	u	< 0.12	u	< 0.12	u	< 13	u	< 0.1365	u	< 0.1365	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.1048	u	< 0.1072	u	< 0.1053	u	< 0.1136	u	< 0.1121	u	< 0.103	u	< 0.107	u	< 0.1055	u	< 0.1069	u	< 1.0921	u	< 0.0928	u	< 0.0897	u	< 0.0881	u	< 0.092	u	< 0.088	u	< 0.085	u	< 8.9	u	< 0.0966	u	< 0.0967	u
1,3-Dichlorobenzene	-	-	-	-	< 0.0973	u	< 0.0996	u	< 0.0978	u	< 0.1055	u	< 0.1041	u	< 0.0957	u	< 0.0994	u	< 0.098	u	< 0.0992	u	< 1.0141	u	< 0.0937	u	< 0.0905	u	< 0.0889	u	< 0.093	u	< 0.088	u	< 0.086	u	< 9	u	< 0.0975	u	< 0.0976	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.1146	u	< 0.1173	u	< 0.1152	u	< 0.1242	u	< 0.1226	u	< 0.1127	u	< 0.117	u	< 0.1154	u	< 0.1169	u	< 1.1942	u	< 0.1025	u	< 0.099	u	< 0.0972	u	< 0.1	u	< 0.097	u	< 0.094	u	< 9.9	u	< 0.1067	u	< 0.1067	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	< 0.1015	u	< 0.1039	u	< 0.1021	u	< 0.1101	u	< 0.1087	u	< 0.0998	u	< 0.1037	u	< 0.1023	u	< 0.1036	u	76	v	< 0.1218	u	< 0.1177	u	< 0.1156	u	< 0.12	u	2.1	v	< 0.11	u	< 12	u	11	v	18	v
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	< 0.1277	u	< 0.1306	u	< 0.1283	u	< 0.1384	u	< 0.1366	u	< 0.1255	u	< 0.1304	u	< 0.1286	u	< 0.1302	u	< 1.3305	u	< 0.1213	u	< 0.1172	u	< 0.1151	u	< 0.12	u	< 0.11	u	< 0.11	u	< 12	u	< 0.1263	u	< 0.1263	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	< 0.1267	u	< 0.1296	u	< 0.1273	u	< 0.1373	u	< 0.1355	u	< 0.1245	u	< 0.1293	u	< 0.1275	u	< 0.1292	u	< 1.32	u	< 0.1005	u	< 0.0972	u	< 0.0954	u	< 0.099	u	< 0.095	u	< 0.093	u	< 9.7	u	< 0.1047	u	< 0.1047	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	< 0.1096	u	< 0.1121	u	< 0.1101	u	< 0.1187	u	< 0.1172	u	< 0.1077	u	< 0.1119	u	< 0.1103	u	< 0.1117	u	< 1.1417	u	< 0.113	u	< 0.1093	u	< 0.1073	u	< 0.11	u	< 0.11	u	< 0.1	u	< 11	u	< 0.1177	u	< 0.1177	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	< 0.0861	u	< 0.0881	u	< 0.0865	u	< 0.0933	u	< 0.0922	u	< 0.0847	u	< 0.0879	u	< 0.0867	u	< 0.0878	u	36	v	< 0.1316	u	< 0.1272	u	< 0.1249	u	< 0.13	u	< 0.12	u	< 0.12	u	< 13	u	4.3	v	11	v
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	< 0.0455	u	< 0.0466	u	< 0.0458	u	< 0.0493	u	< 0.0487	u	< 0.0448	u	< 0.0465	u	< 0.0458	u	< 0.0464	u	< 0.4744	u	< 0.0804	u	< 0.0777	u	< 0.0763	u	< 0.079	u	< 0.076	u	< 0.074	u	< 7.7	u	< 0.0837	u	< 0.0837	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	< 0.098	u	< 0.1003	u	< 0.0985	u	< 0.1062	u	< 0.1049	u	< 0.0964	u	< 0.1001	u	< 0.0987	u	< 0.1	u	< 1.0214	u	< 0.1082	u	< 0.1046	u	< 0.1027	u	< 0.11	u	< 0.1	u	< 0.1	u	< 10	u	< 0.1127	u	< 0.1127	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	< 0.1218	u	< 0.1246	u	< 0.1224	u	< 0.132	u	< 0.1303	u	< 0.1197	u	< 0.1244	u	< 0.1226	u	< 0.1242	u	< 1.2691	u	< 0.1282	u	< 0.1239	u	< 0.1217	u	< 0.13	u	< 0.12	u	< 0.12	u	< 12	u	< 0.1335	u	< 0.1336	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	< 0.1174	u	< 0.1201	u	< 0.118	u	< 0.1272	u	< 0.1256	u	< 0.1154	u	< 0.1199	u	< 0.1182	u	< 0.1197	u	< 1.2232	u	< 0.0954	u	< 0.0922	u	< 0.0905	u	< 0.094	u	< 0.09	u	< 0.088	u	< 9.2	u	< 0.0993	u	< 0.0994	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	< 0.1022	u	< 0.1046	u	< 0.1028	u	< 0.1108	u	< 0.1094	u	< 0.1005	u	< 0.1044	u	< 0.103	u	< 0.1043	u	< 1.0655	u	< 0.0955	u	< 0.0923	u	< 0.0907	u	< 0.094	u	< 0.09	u	< 0.088	u	< 9.2	u	< 0.0995	u	< 0.0995	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	< 0.1003	u	< 0.1026	u	< 0.1008	u	< 0.1087	u	< 0.1073	u	< 0.0986	u	< 0.1024	u	< 0.101	u	< 0.1023	u	130	v	< 0.1438	u	< 0.139	u	< 0.1365	u	< 0.14	u	3	v	< 0.13	u	< 14	u	20	v	31	v
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	< 0.1098	u	< 0.1124	u	< 0.1104	u	< 0.119	u	< 0.1175	u	< 0.108	u	< 0.1122	u	< 0.1106	u	< 0.112	u	56	v	< 0.1013	u	< 0.0979	u	< 0.0961	u	< 0.1	u	< 0.096	u	< 0.093	u	< 9.8	u	13	v	24	v
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	< 0.1247	u	< 0.1276	u	< 0.1253	u	< 0.1351	u	< 0.1334	u	< 0.1226	u	< 0.1273	u	< 0.1255	u	< 0.1271	u	< 1.2991	u	< 0.1306	u	< 0.1262	u	< 0.1239	u	< 0.13	u	< 0.12	u	< 0.12	u	< 13	u	< 0.136	u	< 0.136	u
2-Nitrophenol	-	-	-	-	< 0.0985	u	< 0.1008	u	< 0.099	u	< 0.1067	u	< 0.1054	u	< 0.0968	u	< 0.1006	u	< 0.0992	u	< 0.1004	u	< 1.0262	u	< 0.1202	u	< 0.1162	u	< 0.1141	u	< 0.12	u	< 0.11	u	< 0.11	u	< 12	u	< 0.1252	u	< 0.1252	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	< 0.0844	u	< 0.0863	u	< 0.0848	u	< 0.0914	u	< 0.0903	u	< 0.0829	u	< 0.0862	u	< 0.085	u	< 0.086	u	< 0.8792	u	< 0.0892	u	< 0.0862	u	< 0.0847	u	< 0.088	u	< 0.084	u	< 0.082	u	< 8.6	u	< 0.0929	u	< 0.0929	u
3+4-Methylphenol	-	-	-	-	< 0.1135	u	< 0.1162	u	< 0.1141	u	< 0.1231	u	< 0.1215	u	< 0.1116	u	< 0.116	u	< 0.1143	u	< 0.1158	u	100	v	< 0.0877	u	< 0.0848	u	< 0.0833	u	< 0.087	u	< 0.083	u	< 0.081	u	< 8.4	u	24	v	43	v
3-Nitroaniline	-	-	-	-	< 0.1056	u	< 0.108	u	< 0.1061	u	< 0.1144	u	< 0.113	u	< 0.1038	u	< 0.1078	u	< 0.1063	u	< 0.1077	u	< 1.1	u	< 0.1068	u	< 0.1032	u	< 0.1014	u	< 0.11	u	< 0.1	u	< 0.098	u	< 10	u	< 0.1112	u	< 0.1113	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	< 0.0596	u	< 0.061	u	< 0.0599	u	< 0.0646	u	< 0.0637	u	< 0.0586	u	< 0.0608	u	< 0.06	u	< 0.0608	u	< 0.6208	u	< 0.0733	u	< 0.0708	u	< 0.0695	u	< 0.072	u	< 0.069	u	< 0.067	u	< 7.1	u	< 0.0763	u	< 0.0763	u
4-Bromophenyl phenyl ether	-	-	-	-	< 0.1162	u	< 0.1189	u	< 0.1168	u	< 0.126	u	< 0.1244	u	< 0.1143	u	< 0.1187	u	< 0.1171	u	< 0.1185	u	< 1.2113	u	< 0.1158	u	< 0.112	u	< 0.1099	u	< 0.11	u	< 0.11	u	< 0.11	u	< 11	u	< 0.1206	u	< 0.1207	u
4-Chloro-3-methylphenol	-	-	-	-	< 0.1091	u	< 0.1116	u	< 0.1096	u	< 0.1182	u	< 0.1167	u	< 0.1073	u	< 0.1114	u	< 0.1098	u	< 0.1113	u	< 1.1368	u	< 0.1446	u	< 0.1397	u	< 0.1372	u	< 0.14	u	< 0.14	u	< 0.13	u	< 14	u	< 0.1505	u	< 0.1506	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	< 0.1013	u	< 0.1037	u	< 0.1018	u	< 0.1098	u	< 0.1084	u	< 0.0996	u	< 0.1035	u	< 0.102	u	< 0.1033	u	< 1.0559	u	< 0.1317	u	< 0.1273	u	< 0.125	u	< 0.13	u	< 0.12	u	< 0.12	u	< 13	u	< 0.1372	u	< 0.1372	u
4-Chlorophenyl phenyl ether	-	-	-	-	< 0.1631	u	< 0.1669	u	< 0.164	u	< 0.1768	u	< 0.1746	u	< 0.1604	u	< 0.1666	u	< 0.1643	u	< 0.1664	u	< 1.7001	u	< 0.1384	u	< 0.1338	u	< 0.1314	u	< 0.14	u	< 0.13	u	< 0.13	u	< 13	u	< 0.1442	u	< 0.1442	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	< 0.0984	u	< 0.1007	u	< 0.0989	u	< 0.1067	u	< 0.1053	u	< 0.0968	u	< 0.1005	u	< 0.0991	u	< 0.1004	u	< 1.0255	u	< 0.0854	u	< 0.0826	u	< 0.0811	u	< 0.084	u	< 0.081	u	< 0.079	u	< 8.2	u	< 0.089	u	< 0.089	u
4-Nitrophenol	-	-	-	-	< 0.0944	u	< 0.0966	u	< 0.0949	u	< 0.1023	u	< 0.101	u	< 0.0928	u	< 0.0964	u	< 0.0951	u	< 0.0963	u	< 0.9837	u	< 0.0923	u	< 0.0892	u	< 0.0876	u	< 0.091	u	< 0.087	u	< 0.085	u	< 8.9	u	< 0.0961	u	< 0.0962	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	< 0.1335	u	< 0.1366	u	< 0.1342	u	< 0.1447	u	< 0.1429	u	< 0.1313	u	< 0.1363	u	< 0.1344	u	< 0.1362	u	< 1.3913	u	< 0.1039	u	< 0.1004	u	< 0.0986	u	< 0.1	u	< 0.098	u	< 0.096	u	< 10	u	< 0.1082	u	< 0.1082	u
Acenaphthylene	-	-	-	-	< 0.111	u	< 0.1136	u	< 0.1115	u	< 0.1203	u	< 0.1188	u	< 0.1091	u	< 0.1133	u	< 0.1118	u	< 0.1132	u	< 1.1566	u	< 0.0986	u	< 0.0953	u	< 0.0936	u	< 0.097	u	< 0.093	u	< 0.091	u	< 9.5	u	< 0.1027	u	< 0.1027	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	< 0.0954	u	< 0.0976	u	< 0.0958	u	< 0.1034	u	< 0.102	u	< 0.0938	u	< 0.0974	u	< 0.096	u	< 0.0973	u	< 0.9938	u	< 0.1145	u	< 0.1107	u	< 0.1087	u	< 0.11	u	< 0.11	u	< 0.11	u	< 11	u	< 0.1192	u	< 0.1193	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	< 0.0931	u	< 0.0952	u	< 0.0935	u	< 0.1009	u	< 0.0996	u	< 0.0915	u	< 0.095	u	< 0.0937	u	< 0.0949	u	< 0.9698	u	< 0.0804	u	< 0.0777	u	< 0.0763	u	< 0.079	u	< 0.076	u	< 0.074	u	< 7.7	u	< 0.0838	u	< 0.0838	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	< 0.1228	u	< 0.1257	u	< 0.1234	u	< 0.1331	u	< 0.1314	u	< 0.1208	u	< 0.1254	u	< 0.1237	u	< 0.1253	u	< 1.2799	u	< 0.1477	u	< 0.1427	u	< 0.1401	u	< 0.15	u	< 0.14	u	< 0.14	u	< 14	u	< 0.1538	u	< 0.1538	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	< 0.0861	u	< 0.0881	u	< 0.0865	u	< 0.0933	u	< 0.0921	u	< 0.0847	u	< 0.0879	u	< 0.0867	u	< 0.0878	u	< 0.8973	u	< 0.1043	u	< 0.1008	u	< 0.099	u	< 0.1	u	< 0.098	u	< 0.096	u	< 10	u	< 0.1086	u	< 0.1087	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	< 0.1229	u	< 0.1258	u	< 0.1236	u	< 0.1333	u	< 0.1316	u	< 0.1209	u	< 0.1256	u	< 0.1238	u	< 0.1254	u	< 1.2813	u	< 0.0918	u	< 0.0887	u	< 0.0871	u	< 0.091	u	< 0.087	u	< 0.084	u	< 8.8	u	< 0.0955	u	< 0.0956	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	< 0.104	u	< 0.1064	u	< 0.1046	u	< 0.1128	u	< 0.1113	u	< 0.1023	u	< 0.1062	u	< 0.1048	u	< 0.1061	u	< 1.0842	u	< 0.1094	u	< 0.1058	u	< 0.1039	u	< 0.11	u	< 0.1	u	< 0.1	u	< 11	u	< 0.114	u	< 0.114	u
Benzo(g,h,i)perylene	-	-	-	-	< 0.1247	u	< 0.1276	u	< 0.1253	u	< 0.1351	u	< 0.1334	u	< 0.1226	u	< 0.1273	u	< 0.1255	u	< 0.1272	u	< 1.2992	u	< 0.1068	u	< 0.1033	u	< 0.1014	u	< 0.11	u	< 0.1	u	< 0.098	u	< 10	u	< 0.1113	u	< 0.1113	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	< 0.1238	u	< 0.1267	u	< 0.1244	u	< 0.1342	u	< 0.1325	u	< 0.1217	u	< 0.1264	u	< 0.1247	u	< 0.1263	u	< 1.2902	u	< 0.1067	u	< 0.1032	u	< 0.1013	u	< 0.11	u	< 0.1	u	< 0.098	u	< 10	u	< 0.1111	u	< 0.1112	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	< 0.0624	u	< 0.0639	u	< 0.0627	u	< 0.0677	u	< 0.0668	u	< 0.0614	u	< 0.0638	u	< 0.0629	u	< 0.0637	u	< 0.6505	u	< 0.1005	u	< 0.0971	u	< 0.0953	u	< 0.099	u	< 0.095	u	< 0.092	u	< 9.7	u	< 0.1046	u	< 0.1046	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	< 0.0973	u	< 0.0996	u	< 0.0978	u	< 0.1055	u	< 0.1041	u	< 0.0957	u	< 0.0994	u	< 0.098	u	< 0.0992	u	< 1.0141	u	< 0.0949	u	< 0.0917	u	< 0.09	u	< 0.094	u	< 0.09	u	< 0.087	u	< 9.1	u	< 0.0988	u	< 0.0988	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	< 0.1046	u	< 0.107	u	< 0.1051	u	< 0.1133	u	< 0.1119	u	< 0.1028	u	< 0.1068	u	< 0.1053	u	< 0.1066	u	< 1.0897	u	< 0.1315	u	< 0.1271	u	< 0.1248	u	< 0.13	u	< 0.12	u	< 0.12	u	< 13	u	< 0.1369	u	< 0.137	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	< 0.1082	u	< 0.1108	u	< 0.1088	u	< 0.1173	u	< 0.1158	u	< 0.1064	u	< 0.1105	u	< 0.109	u	< 0.1104	u	< 1.1281	u	< 0.089	u	< 0.0861	u	< 0.0845	u	< 0.088	u	< 0.084	u	< 0.082	u	< 8.6	u	< 0.0927	u	< 0.0927	u
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	< 0.0837	u	< 0.0856	u	< 0.0841	u	< 0.0907	u	< 0.0896	u	< 0.0823	u	< 0.0855	u	< 0.0843	u	< 0.0854	u	< 0.8722	u	< 0.1082	u	< 0.1046	u	< 0.1027	u	< 0.11	u	< 0.1	u	< 0.1	u	< 10	u	< 0.1127	u	< 0.1127	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	< 0.1231	u	< 0.1259	u	< 0.1237	u	< 0.1334	u	< 0.1317	u	< 0.121	u	< 0.1257	u	< 0.1239	u	< 0.1255	u	< 1.2827	u	< 0.0987	u	< 0.0954	u	< 0.0937	u	< 0.098	u	< 0.093	u	< 0.091	u	< 9.5	u	< 0.1028	u	< 0.1028	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')		SWMU 10-16 (8-9')		SWMU 10-17 (6-8')		SWMU 10-18 (2-2.5')		SWMU 10-18 (8-10')		SWMU 10-18 (18-20')		SWMU 10-19 (2-2.5')		SWMU 10-19 (12-14')		SWMU 10-19 (18-20')		SWMU 10-20 (2-2.5')		SWMU 10-20 (8-10')		SWMU 10-20 (10-12')	
					1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002		1505705-003		1505617-009		1605874-001		1605874-002		1605874-003		1605875-005		1605875-006		1605875-007		1605875-008		1605875-001		1605875-002	
					5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/16/2016		5/16/2016		5/16/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016		5/17/2016	
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	< 0.1337	u	< 0.1369	u	< 0.1344	u	< 0.145	u	< 0.1431	u	< 0.1315	u	< 0.1366	u	< 0.1347	u	< 0.1364	u	< 1.3938	u	< 0.1073	u	< 0.1037	u	< 0.1018	u	< 0.11	u	< 0.1	u	< 0.099	u	< 10	u	< 0.1117	u	< 0.1117	u
Carbazole	-	-	-	-	< 0.102	u	< 0.1044	u	< 0.1025	u	< 0.1106	u	< 0.1092	u	< 0.1003	u	< 0.1042	u	< 0.1028	u	< 0.1041	u	< 1.0633	u	< 0.0818	u	< 0.0791	u	< 0.0777	u	< 0.081	u	< 0.077	u	< 0.075	u	< 7.9	u	< 0.0852	u	< 0.0852	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	< 0.11	u	< 0.1126	u	< 0.1106	u	< 0.1192	u	< 0.1177	u	< 0.1082	u	< 0.1123	u	< 0.1108	u	< 0.1122	u	< 1.1464	u	< 0.1032	u	< 0.0997	u	< 0.0979	u	< 0.1	u	< 0.097	u	< 0.095	u	< 9.9	u	< 0.1074	u	< 0.1075	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	< 0.1187	u	< 0.1214	u	< 0.1193	u	< 0.1286	u	< 0.127	u	< 0.1167	u	< 0.1212	u	< 0.1195	u	< 0.1211	u	< 1.2369	u	< 0.098	u	< 0.0947	u	< 0.093	u	< 0.097	u	< 0.093	u	< 0.09	u	< 9.4	u	< 0.102	u	< 0.1021	u
Dibenzofuran	-	-	-	-	< 0.1172	u	< 0.1199	u	< 0.1178	u	< 0.127	u	< 0.1254	u	< 0.1152	u	< 0.1197	u	< 0.118	u	< 0.1195	u	< 1.221	u	< 0.1219	u	< 0.1178	u	< 0.1157	u	< 0.12	u	< 0.12	u	< 0.11	u	< 12	u	< 0.1269	u	< 0.1269	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	< 0.1243	u	< 0.1272	u	< 0.125	u	< 0.1348	u	< 0.133	u	< 0.1222	u	< 0.127	u	< 0.1252	u	< 0.1268	u	< 1.2957	u	< 0.1229	u	< 0.1188	u	< 0.1166	u	< 0.12	u	< 0.12	u	< 0.11	u	< 12	u	< 0.1279	u	< 0.128	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	< 0.1008	u	< 0.1032	u	< 0.1013	u	< 0.1093	u	< 0.1079	u	< 0.0991	u	< 0.103	u	< 0.1015	u	< 0.1028	u	< 1.0507	u	< 0.1185	u	< 0.1146	u	< 0.1125	u	< 0.12	u	< 0.11	u	< 0.11	u	< 11	u	< 0.1234	u	< 0.1235	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	< 0.1239	u	< 0.1268	u	< 0.1245	u	< 0.1343	u	< 0.1326	u	< 0.1218	u	< 0.1265	u	< 0.1248	u	< 0.1264	u	< 1.2912	u	0.14	J	0.089	J	< 0.086	u	< 0.089	u	< 0.086	u	< 0.083	u	< 8.7	u	< 0.0943	u	< 0.0944	u
Di-n-octyl phthalate	-	-	-	-	< 0.122	u	< 0.1248	u	< 0.1226	u	< 0.1322	u	< 0.1305	u	< 0.1199	u	< 0.1246	u	< 0.1228	u	< 0.1244	u	< 1.271	u	< 0.1034	u	< 0.0999	u	< 0.0981	u	< 0.1	u	< 0.098	u	< 0.095	u	< 10	u	< 0.1076	u	< 0.1077	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	< 0.1329	u	< 0.136	u	< 0.1336	u	< 0.1441	u	< 0.1423	u	< 0.1307	u	< 0.1358	u	< 0.1339	u	< 0.1356	u	< 1.3854	u	< 0.0698	u	< 0.0675	u	< 0.0662	u	< 0.069	u	< 0.066	u	< 0.064	u	< 6.7	u	< 0.0727	u	< 0.0727	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	< 0.1491	u	0.2	J	< 0.1499	u	< 0.1617	u	< 0.1596	u	< 0.1466	u	< 0.1523	u	< 0.1502	u	< 0.1521	u	7.1	v	< 0.1109	u	< 0.1072	u	< 0.1053	u	< 0.11	u	< 0.1	u	< 0.1	u	< 11	u	1.5	v	2.1	v
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	< 0.1034	u	< 0.1058	u	< 0.1039	u	< 0.1121	u	< 0.1106	u	< 0.1017	u	< 0.1056	u	< 0.1041	u	< 0.1055	u	< 1.0776	u	< 0.0955	u	< 0.0923	u	< 0.0907	u	< 0.094	u	< 0.09	u	< 0.088	u	< 9.2	u	< 0.0995	u	< 0.0995	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.1084	u	< 0.1109	u	< 0.1089	u	< 0.1175	u	< 0.116	u	< 0.1066	u	< 0.1107	u	< 0.1091	u	< 0.1105	u	< 1.1295	u	< 0.1366	u	< 0.132	u	< 0.1296	u	< 0.13	u	< 0.13	u	< 0.13	u	< 13	u	< 0.1422	u	< 0.1422	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	< 0.076	u	< 0.0778	u	< 0.0764	u	< 0.0824	u	< 0.0813	u	< 0.0747	u	< 0.0776	u	< 0.0765	u	< 0.0775	u	< 0.7919	u	< 0.1385	u	< 0.1339	u	< 0.1315	u	< 0.14	u	< 0.13	u	< 0.13	u	< 13	u	< 0.1443	u	< 0.1443	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	< 0.0975	u	< 0.0998	u	< 0.098	u	< 0.1057	u	< 0.1044	u	< 0.0959	u	< 0.0996	u	< 0.0982	u	< 0.0995	u	< 1.0163	u	< 0.1041	u	< 0.1006	u	< 0.0988	u	< 0.1	u	< 0.098	u	< 0.096	u	< 10	u	< 0.1084	u	< 0.1084	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	< 0.1245	u	< 0.1274	u	< 0.1251	u	< 0.1349	u	< 0.1332	u	< 0.1224	u	< 0.1271	u	< 0.1254	u	< 0.127	u	< 1.2975	u	< 0.0946	u	< 0.0915	u	< 0.0898	u	< 0.093	u	< 0.089	u	< 0.087	u	< 9.1	u	< 0.0985	u	< 0.0986	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	< 0.1042	u	< 0.1067	u	< 0.1048	u	< 0.113	u	< 0.1115	u	< 0.1025	u	< 0.1065	u	< 0.105	u	< 0.1063	u	24	v	< 0.1163	u	< 0.1124	u	< 0.1104	u	< 0.11	u	0.41	v	< 0.11	u	< 11	u	5	v	8.5	v
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	< 0.1128	u	< 0.1154	u	< 0.1134	u	< 0.1223	u	< 0.1207	u	< 0.1109	u	< 0.1152	u	< 0.1136	u	< 0.115	u	< 1.1755	u	< 0.125	u	< 0.1209	u	< 0.1187	u	< 0.12	u	< 0.12	u	< 0.12	u	< 12	u	< 0.1302	u	< 0.1303	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	< 0.1136	u	< 0.1162	u	< 0.1141	u	< 0.1231	u	< 0.1215	u	< 0.1117	u	< 0.116	u	< 0.1144	u	< 0.1158	u	< 1.1834	u	< 0.1165	u	< 0.1126	u	< 0.1105	u	< 0.12	u	< 0.11	u	< 0.11	u	< 11	u	< 0.1213	u	< 0.1213	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	< 0.0981	u	< 0.1004	u	< 0.0986	u	< 0.1063	u	< 0.105	u	< 0.0964	u	< 0.1002	u	< 0.0988	u	< 0.1	u	< 1.0222	u	< 0.1183	u	< 0.1144	u	< 0.1123	u	< 0.12	u	< 0.11	u	< 0.11	u	< 11	u	< 0.1232	u	< 0.1233	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	< 0.0684	u	< 0.07	u	< 0.0687	u	< 0.0741	u	< 0.0732	u	< 0.0673	u	< 0.0699	u	< 0.0689	u	< 0.0698	u	< 0.7128	u	< 0.0779	u	< 0.0753	u	< 0.0739	u	< 0.077	u	< 0.074	u	< 0.072	u	< 7.5	u	< 0.0811	u	< 0.0811	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	< 0.1146	u	< 0.1173	u	< 0.1152	u	< 0.1242	u	< 0.1226	u	< 0.1127	u	< 0.117	u	< 0.1154	u	< 0.1169	u	15	v	< 0.0823	u	< 0.0796	u	< 0.0781	u	< 0.081	u	0.61	v	< 0.076	u	< 7.9	u	3.2	v	5	v
Phenol	1.83E+04	(1)	7.74E+04	(5)	< 0.0982	u	< 0.1005	u	< 0.0987	u	< 0.1064	u	< 0.1051	u	< 0.0965	u	< 0.1003	u	< 0.0989	u	< 0.1001	u	52	v	< 0.0913	u	< 0.0882	u	< 0.0866	u	< 0.09	u	< 0.086	u	< 0.084	u	< 8.8	u	30	v	34	v
Pyrene	1.74E+03	(1)	7.53E+03	(5)	< 0.1414	u	< 0.1447	u	< 0.1421	u	< 0.1533	u	< 0.1513	u	< 0.139	u	< 0.1444	u	< 0.1424	u	< 0.1442	u	< 1.4735	u	< 0.0916	u	< 0.0885	u	< 0.0869	u	< 0.09	u	< 0.086	u	< 0.084	u	< 8.8	u	0.27	v	0.33	v
Pyridine	7.80E+01	(2)	1.20E+03	(6)	< 0.0921	u	< 0.0942	u	< 0.0925	u	< 0.0998	u	< 0.0985	u	< 0.0905	u	< 0.094	u	< 0.0927	u	< 0.0939	u	< 0.9594	u	< 0.0961	u	< 0.0928	u	< 0.0912	u	< 0.095	u	< 0.091	u	< 0.088	u	< 9.3	u	< 0.1	u	< 0.1001	u
Total Petroleum Hydrocarbons (mg/kg)																																									
Gasoline Range Organics (GRO)	-		-		< 1	u	50	v	< 1	u	< 1	u	< 2.6	u	< 1	u	< 1	u	< 1	u	< 1	u	1300	v	1.5	J	1	J	0.66	J	< 0.6449	u	270	v	< 0.5228	u	1.1	J	1100	v	640	v
Diesel Range Organics (DRO)	1.00E+03	(9)	3.80E+03	(9)	< 5	u	**1200**	v	< 6.2	u	< 5	u	< 5	u	< 5	u	< 6	u	< 6	u	< 6	u	**7800**	v	< 4.3	u	11	J	< 4	u	< 4.3	u	590	v	< 4.1	u	**8900**	v	**2000**	v	**3500**	v
Motor Oil Range Organics (MRO)	1.00E+03	(9)	3.80E+03	(9)	< 49	u	< 550	u	< 56	u	< 49	u	< 48	u	< 48	u	< 50	u	< 50	u	< 50	u	< 4776	u	< 60	u	< 58	u	< 56	u	< 60	u	78	v	< 57	u	**6700**	v	< 640	u	< 630	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (July
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
() NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels9
Bold with yellow highlight value exceeds Residential Screening Level
* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003
v = reportable detection above the Practical quantitation limit (PQL)
u - result is not detected at method detection limit (MDL)
j - estimated result at concentration above MDL but less than PQL

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-20 (16-18')		SWMU 10-20 (20-22')		SWMU 10-21 (2-2.5')		SWMU 10-21 (12-14')		SWMU 10-21 (20-22')		SWMU 10-22 (2-2.5')		SWMU 10-22 (8-9')		SWMU 10-23 (2-2.5')		SWMU 10-23 (15-16')		SWMU 10-24 (2-2.5')		SWMU 10-24 (6-8')		SWMU 10-24 (8-10')		SWMU 10-24 (15-16')		SWMU 10-25 (2-2.5')		SWMU 10-25 (10-12')		SWMU 10-25 (16.5-18')	
					1605875-003		1605875-004		1605943-001		1605943-002		1605943-003		1605943-004		1605943-005		1609B57-001		1609B57-002		1609B57-003		1609B57-004		1609B57-005		1609B57-006		1609B57-007		1609B57-008		1609B57-009	
					5/17/2016		5/17/2016		5/18/2016		5/18/2016		5/18/2016		5/18/2016		5/18/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016	
Metals (mg/kg)																																				
Antimony	3.13E+01	(1)	1.42E+02	(5)	2.5	J	3.3	v	< 1.3	u	< 7.3205	u	< 6.8	u	< 7.3	u	< 2.9	u	< 2.2222	u	< 1.1461	u	1.1	J	< 1.2345	u	< 2.4091	u	2.1	J	< 1.1611	u	< 2.4915	u	1.6	J
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.2	J	2.7	J	3.3	v	1.8	J	3.3	v	2.4	J	2.6	J	< 1.9626	u	1	J	< 0.9076	u	< 1.0903	u	< 2.1276	u	< 1.0181	u	< 1.0254	u	< 2.2003	u	< 1.0232	u
Barium	1.56E+04	(1)	4.35E+03	(5)	210	v	750	v	570	v	220	v	1000	v	290	v	350	v	220	v	730	v	190	v	120	v	130	v	510	v	96	v	190	v	460	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	0.87	v	0.88	v	0.72	v	1.3	v	0.91	v	0.89	v	0.97	v	1.1	v	0.82	v	0.6	v	0.99	v	1.3	v	0.95	v	0.58	v	1.4	v	0.86	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	< 0.075	u	< 0.072	u	< 0.0689	u	< 0.0783	u	< 0.0725	u	< 0.0782	u	< 0.0768	u	< 0.14	u	< 0.0722	u	< 0.0648	u	< 0.0778	u	< 0.1518	u	< 0.0726	u	< 0.0732	u	< 0.157	u	< 0.073	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	21	v	12	v	9.2	v	11	v	12	v	12	v	13	v	14	v	13	v	6.3	v	12	v	15	v	15	v	7.2	v	16	v	15	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	0.96	J	< 0.64	u	< 0.64	u	< 0.64	u	< 0.64	u	< 0.64	u	< 0.64	u	<0.1	u	<0.1	u	<0.1	u	<0.1	u	<0.1	u	<0.1	u	<0.1	u	<0.1	u	<0.1	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.5	v	8.5	v	3.7	v	5.6	v	8.8	v	4.9	v	7.8	v	< 0.047	u	0.071	J	0.12	J	0.19	J	0.15	J	< 0.049	u	0.12	J	0.34	v	0.076	J
Cyanide	1.12E+01	(1)	1.21E+01	(5)	< 0.039	u	< 0.039	u	2.2	v	0.048	J	0.044	J	0.04	J	< 0.039	u	0.46	J	0.28	J	0.56	J	0.51	J	0.54	J	0.2	J	0.3	J	0.45	J	0.2	J
Iron	5.50E+04	(2)	8.20E+05	(6)	17000	v	20000	v	9900	v	20000	v	18000	v	14000	v	17000	v	19000	v	19000	v	11000	v	18000	v	20000	v	20000	v	12000	v	23000	v	18000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	5.3	v	3.5	v	2.1	v	5.1	v	2.6	v	4.3	v	3.2	v	2.6	v	0.95	v	2.3	v	3.9	v	1.5	v	1.1	v	2.1	v	2.9	v	< 0.2001	u
Manganese	1.80E+03	(2)	2.60E+04	(6)	750	v	1100	v	440	v	240	v	1800	v	570	v	520	v	450	v	850	v	370	v	200	v	290	v	1400	v	500	v	300	v	1100	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	0.37	v	0.0012	J	0.056	v	0.0043	J	< 0.0006	u	0.044	v	< 0.0007	u	0.0072	J	0.0026	J	0.0041	J	0.0023	J	0.0028	J	0.0011	J	0.0031	J	0.0014	J	0.0014	J
Nickel	1.56E+03	(1)	6.19E+03	(5)	10	v	14	v	6	v	11	v	15	v	8.6	v	15	v	12	v	13	v	5.7	v	9.9	v	12	v	16	v	5.7	v	14	v	15	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	< 1.2956	u	< 1.2368	u	< 1.2	u	< 1.3487	u	< 1.2475	u	< 1.346	u	< 1.3228	u	< 4.0179	u	< 2.0723	u	< 1.858	u	< 2.2321	u	< 4.3557	u	< 2.0843	u	< 2.0993	u	< 4.5047	u	< 2.0948	u
Silver	3.91E+02	(1)	1.77E+03	(5)	< 0.038	u	< 0.036	u	< 0.0345	u	< 0.0392	u	< 0.0363	u	< 0.0391	u	< 0.0385	u	< 0.1383	u	< 0.0713	u	< 0.0639	u	< 0.0768	u	< 0.1499	u	< 0.0717	u	< 0.0722	u	< 0.155	u	< 0.0721	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	18	v	16	v	16	v	21	v	17	v	18	v	17	v	23	v	13	v	12	v	19	v	23	v	21	v	15	v	25	v	18	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	26	v	27	v	16	v	20	v	27	v	20	v	23	v	21	v	25	v	11	v	18	v	22	v	26	v	11	v	26	v	27	v
Volatiles (mg/kg)																																				
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	< 0.0595	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.07	u	< 0.032	u	< 0.0022	u	< 0.2042	u	< 0.0016	u	< 0.0019	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	< 0.038	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.045	u	< 0.02	u	< 0.0022	u	< 0.1302	u	< 0.0016	u	< 0.0019	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	< 0.1008	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.12	u	< 0.054	u	< 0.0022	u	< 0.3458	u	< 0.0016	u	< 0.0019	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	< 0.0733	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.086	u	< 0.039	u	< 0.0022	u	< 0.2515	u	< 0.0016	u	< 0.0019	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	< 0.0336	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.039	u	< 0.018	u	< 0.0022	u	< 0.1153	u	< 0.0016	u	< 0.0019	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	< 0.2037	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.24	u	< 0.11	u	< 0.0004	u	< 0.6989	u	< 0.0003	u	< 0.0003	u
1,1-Dichloropropene	-	-	-	-	< 0.0493	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.058	u	< 0.026	u	< 0.0022	u	< 0.1693	u	< 0.0016	u	< 0.0019	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	< 0.0931	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.11	u	< 0.05	u	< 0.0005	u	< 0.3193	u	< 0.0004	u	< 0.0005	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	< 0.1076	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.13	u	< 0.058	u	< 0.0022	u	< 0.3691	u	< 0.0016	u	< 0.0019	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.0665	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.078	u	< 0.036	u	< 0.0007	u	< 0.2282	u	< 0.0005	u	< 0.0006	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4	v	0.0008	J	0.002	J	0.0003	J	0.001	J	0.0003	J	0.0011	J	0.0004	J	0.0016	J	0.0004	J	5.3	v	1.2	v	0.0015	J	5.8	v	0.0146	v	0.0015	J
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	< 0.1905	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.22	u	< 0.1	u	< 0.0002	u	< 0.6536	u	< 0.0002	u	< 0.0002	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	< 0.0442	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.052	u	< 0.024	u	< 0.0022	u	< 0.1518	u	< 0.0016	u	< 0.0019	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.0543	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.064	u	< 0.029	u	< 0.0003	u	< 0.1862	u	< 0.0002	u	< 0.0003	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	< 0.1622	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.19	u	< 0.087	u	< 0.0022	u	< 0.5564	u	< 0.0016	u	< 0.0019	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	< 0.0522	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.061	u	< 0.028	u	< 0.0022	u	< 0.179	u	< 0.0016	u	< 0.0019	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	1.7	v	< 0.0004	u	0.0008	J	< 0.0003	u	0.0007	J	< 0.0003	u	0.0007	J	0.0004	J	0.0011	J	0.0003	J	1.9	v	0.43	v	0.0011	J	2.6	v	0.0046	v	0.0011	J
1,3-Dichlorobenzene	-	-	-	-	< 0.051	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.06	u	< 0.027	u	< 0.0004	u	< 0.175	u	< 0.0003	u	< 0.0004	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	< 0.0706	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.083	u	< 0.038	u	< 0.0022	u	< 0.2421	u	< 0.0016	u	< 0.0019	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.0771	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.09	u	< 0.041	u	< 0.0004	u	< 0.2644	u	< 0.0003	u	< 0.0004	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	8.4	v	< 0.0003	u	0.0004	J	< 0.0002	u	0.0002	J	< 0.0002	u	< 0.0003	u	< 0.0002	u	0.0004	J	< 0.0002	u	8.1	v	1.6	v	0.0008	J	13	v	0.0099	v	0.0006	J
2,2-Dichloropropane	-	-	-	-	< 0.0356	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.042	u	< 0.019	u	< 0.0003	u	< 0.1222	u	< 0.0002	u	< 0.0002	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	< 0.3554	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0008	u	< 0.0006	u	< 0.42	u	< 0.19	u	< 0.0008	u	< 1.2194	u	0.0033	J	0.0036	J
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	< 0.0459	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.054	u	< 0.025	u	< 0.0004	u	< 0.1574	u	< 0.0003	u	< 0.0003	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	< 0.3384	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.4	u	< 0.18	u	< 0.0005	u	< 1.1611	u	< 0.0004	u	< 0.0005	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	13	v	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	0.0006	J	< 0.0004	u	14	v	2.8	v	0.0011	J	16	v	0.0086	v	0.0008	J
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	< 0.055	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.064	u	< 0.03	u	< 0.0004	u	< 0.1887	u	< 0.0003	u	< 0.0003	u
4-Isopropyltoluene	-	-	-	-	0.34	J	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	0.38	J	0.11	J	< 0.0004	u	0.61	J	0.0006	J	< 0.0004	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	< 0.1812	u	< 0.0048	u	< 0.0045	u	< 0.0037	u	< 0.0035	u	< 0.0033	u	< 0.0044	u	< 0.0041	u	< 0.0043	u	< 0.0034	u	< 0.21	u	< 0.097	u	< 0.0044	u	< 0.6219	u	< 0.0032	u	< 0.0038	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	< 0.8046	u	0.0054	J	0.0139	v	0.0058	J	0.0063	J	0.0117	v	0.0029	J	0.0071	J	0.0045	J	0.0192	v	< 0.94	u	< 0.43	u	0.0046	J	< 2.7608	u	0.0088	v	0.0043	J
Benzene	1.78E+01	(1)	8.72E+01	(4)	0.36	v	0.0081	v	< 0.0022	u	0.0019	v	0.0085	v	< 0.0017	u	0.0095	v	< 0.002	u	0.0103	v	< 0.0017	u	< 0.29	u	0.26	v	0.01	v	< 0.8538	u	0.0266	v	0.0095	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	< 0.0501	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.059	u	< 0.027	u	< 0.0002	u	< 0.172	u	< 0.0002	u	< 0.0002	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	< 0.0362	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.042	u	< 0.019	u	< 0.0022	u	< 0.1243	u	< 0.0016	u	< 0.0019	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	< 0.0757	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.089	u	< 0.041	u	< 0.0022	u	< 0.2599	u	< 0.0016	u	< 0.0019	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	< 0.2291	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	0.0005	J	0.32	J	0.15	J	< 0.0004	u	< 0.7861	u	< 0.0003	u	< 0.0003	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	< 0.2053	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0008	u	< 0.0008	u	< 0.0008	u	< 0.0006	u	< 0.24	u	< 0.11	u	< 0.0008	u	< 0.7045	u	< 0.0006	u	< 0.0007	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	< 0.0408	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.048	u	< 0.022	u	< 0.0022	u	< 0.1401	u	< 0.0016	u	< 0.0019	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	< 0.0506	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.059	u	< 0.027	u	< 0.0002	u	< 0.1737	u	< 0.0002	u	< 0.0002	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	< 0.1241	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.15	u	< 0.067	u	< 0.0004	u	< 0.4259	u	< 0.0003	u	< 0.0004	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	< 0.0469	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.055	u	< 0.025	u	< 0.0022	u	< 0.161	u	< 0.0016	u	< 0.0019	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	< 0.0554	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.065	u	< 0.03	u	< 0.0006	u	< 0.1899	u	< 0.0004	u	< 0.0005	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	< 0.0362	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.042	u	< 0.019	u	< 0.0022	u	< 0.1241	u	< 0.0016	u	< 0.0019	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.0573	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.067	u	< 0.031	u	< 0.0022	u	< 0.1967	u	< 0.0016	u	< 0.0019	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	< 0.0562	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.066	u	< 0.03	u	< 0.0022	u	< 0.1928	u	< 0.0016	u	< 0.0019	u
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	< 0.0539	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.063	u	< 0.029	u	< 0.0022	u	< 0.1848	u	< 0.0016	u	< 0.0019	u

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-20 (16-18')		SWMU 10-20 (20-22')		SWMU 10-21 (2-2.5')		SWMU 10-21 (12-14')		SWMU 10-21 (20-22')		SWMU 10-22 (2-2.5')		SWMU 10-22 (8-9')		SWMU 10-23 (2-2.5')		SWMU 10-23 (15-16')		SWMU 10-24 (2-2.5')		SWMU 10-24 (6-8')		SWMU 10-24 (8-10')		SWMU 10-24 (15-16')		SWMU 10-25 (2-2.5')		SWMU 10-25 (10-12')		SWMU 10-25 (16.5-18')	
					1605875-003		1605875-004		1605943-001		1605943-002		1605943-003		1605943-004		1605943-005		1609B57-001		1609B57-002		1609B57-003		1609B57-004		1609B57-005		1609B57-006		1609B57-007		1609B57-008		1609B57-009	
					5/17/2016		5/17/2016		5/18/2016		5/18/2016		5/18/2016		5/18/2016		5/18/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016	
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	< 0.1924	u	< 0.0014	u	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0012	u	< 0.001	u	< 0.23	u	< 0.1	u	< 0.0013	u	< 0.6602	u	< 0.0009	u	< 0.0011	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	0.63	v	0.0014	J	0.0012	J	< 0.0003	u	0.0013	J	< 0.0002	u	0.0014	J	0.0004	J	0.0018	J	0.0004	J	0.69	J	0.41	v	0.0018	J	1	J	0.0141	v	0.0018	J
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.0761	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.089	u	< 0.041	u	< 0.0005	u	< 0.2609	u	< 0.0004	u	< 0.0004	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	0.17	J	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	0.0003	J	0.0005	J	0.0002	J	0.24	J	0.14	J	0.0005	J	0.54	J	0.0019	v	0.0004	J
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	< 0.1954	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.23	u	< 0.1	u	< 0.0004	u	< 0.6706	u	0.0009	J	< 0.0003	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	< 0.1793	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.21	u	< 0.096	u	< 0.0022	u	< 0.6153	u	< 0.0016	u	< 0.0019	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	3.1	v	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	3.7	v	0.85	v	< 0.0022	u	3.8	J	0.0063	v	< 0.0019	u
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	0.28	J	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	0.5	J	0.18	J	< 0.0005	u	0.95	J	0.0008	J	< 0.0005	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	0.36	J	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	0.0004	J	0.0006	J	0.0003	J	0.39	J	0.24	J	0.0006	J	0.93	J	0.0029	v	0.0006	J
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	0.16	J	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	0.34	J	0.14	J	< 0.0004	u	0.74	J	0.0006	J	< 0.0003	u
Styrene	7.26E+03	(1)	1.02E+04	(5)	< 0.0555	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.065	u	< 0.03	u	< 0.0003	u	< 0.1905	u	< 0.0002	u	< 0.0002	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	< 0.0516	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.06	u	< 0.028	u	< 0.0003	u	< 0.1769	u	< 0.0002	u	< 0.0003	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	< 0.0516	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.06	u	< 0.028	u	< 0.0003	u	< 0.177	u	< 0.0002	u	< 0.0003	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	2.3	v	0.0065	v	0.0048	v	0.0015	J	0.0062	v	0.0012	J	0.007	v	0.0012	J	0.0074	v	0.0014	J	0.25	J	0.49	v	0.0068	v	0.29	J	0.0031	v	0.0069	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	< 0.1741	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.2	u	< 0.093	u	< 0.0002	u	< 0.5973	u	< 0.0002	u	< 0.0002	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	< 0.091	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.11	u	< 0.049	u	< 0.0003	u	< 0.3123	u	< 0.0002	u	< 0.0002	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	< 0.0667	u	< 0.0024	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.0017	u	< 0.0022	u	< 0.002	u	< 0.0021	u	< 0.0017	u	< 0.078	u	< 0.036	u	< 0.0022	u	< 0.2288	u	< 0.0016	u	< 0.0019	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	< 0.0465	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.055	u	< 0.025	u	< 0.0003	u	< 0.1596	u	< 0.0002	u	< 0.0002	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	< 0.0509	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0004	u	< 0.06	u	< 0.027	u	< 0.0006	u	< 0.1745	u	< 0.0004	u	< 0.0005	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	7	v	0.0036	v	0.0045	v	0.0009	J	0.0039	v	< 0.0007	u	0.0042	v	0.0014	J	0.0055	v	0.0013	J	12	v	3.4	v	0.0053	v	10	v	0.0317	v	0.0051	v
Semi-volatiles (mg/kg)																																				
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	< 0.13	u	< 0.12	u	< 0.12	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.13	u	< 0.12	u	< 0.123	u	< 0.1099	u	< 1.3468	u	< 0.1276	u	< 0.1216	u	< 0.1232	u	< 0.1294	u	< 0.1232	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	< 0.092	u	< 0.086	u	< 0.082	u	< 0.094	u	< 0.086	u	< 0.094	u	< 0.092	u	< 0.0849	u	< 0.0871	u	< 0.0778	u	< 0.9536	u	< 0.0904	u	< 0.0861	u	< 0.0872	u	< 0.0916	u	< 0.0872	u
1,3-Dichlorobenzene	-	-	-	-	< 0.092	u	< 0.087	u	< 0.083	u	< 0.095	u	< 0.087	u	< 0.095	u	< 0.093	u	< 0.0857	u	< 0.0879	u	< 0.0785	u	< 0.9623	u	< 0.0912	u	< 0.0869	u	< 0.088	u	< 0.0925	u	< 0.088	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	< 0.1	u	< 0.095	u	< 0.091	u	< 0.1	u	< 0.095	u	< 0.1	u	< 0.1	u	< 0.0938	u	< 0.0962	u	< 0.0859	u	< 1.0526	u	< 0.0998	u	< 0.095	u	< 0.0963	u	< 0.1011	u	< 0.0963	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	2.2	v	< 0.11	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.1114	u	< 0.1143	u	< 0.102	u	5	v	1.1	v	< 0.1129	u	0.82	v	0.76	v	< 0.1144	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	< 0.12	u	< 0.11	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.111	u	< 0.1138	u	< 0.1016	u	< 1.246	u	< 0.1181	u	< 0.1125	u	< 0.114	u	< 0.1197	u	< 0.114	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	< 0.099	u	< 0.094	u	< 0.089	u	< 0.1	u	< 0.093	u	< 0.1	u	< 0.099	u	< 0.092	u	< 0.0944	u	< 0.0843	u	< 1.033	u	< 0.0979	u	< 0.0932	u	< 0.0945	u	< 0.0992	u	< 0.0945	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	< 0.11	u	< 0.11	u	< 0.1	u	< 0.12	u	< 0.1	u	< 0.11	u	< 0.11	u	< 0.1034	u	< 0.1061	u	< 0.0947	u	< 1.1615	u	< 0.1101	u	< 0.1048	u	< 0.1063	u	< 0.1116	u	< 0.1062	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	8.3	v	< 0.12	u	< 0.12	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.13	u	< 0.1204	u	< 0.1235	u	< 0.1103	u	1.5	J	0.46	v	< 0.122	u	0.17	J	< 0.1299	u	< 0.1237	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	< 0.079	u	< 0.075	u	< 0.071	u	< 0.082	u	< 0.074	u	< 0.081	u	< 0.079	u	< 0.0735	u	< 0.0754	u	< 0.0674	u	< 0.8258	u	< 0.0783	u	< 0.0745	u	< 0.0755	u	< 0.0793	u	< 0.0755	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	< 0.11	u	< 0.1	u	< 0.096	u	< 0.11	u	< 0.1	u	< 0.11	u	< 0.11	u	< 0.099	u	< 0.1016	u	< 0.0907	u	< 1.1119	u	< 0.1054	u	< 0.1004	u	< 0.1017	u	< 0.1068	u	< 0.1017	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	< 0.13	u	< 0.12	u	< 0.11	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.13	u	< 0.1173	u	< 0.1203	u	< 0.1075	u	< 1.3174	u	< 0.1249	u	< 0.1189	u	< 0.1205	u	< 0.1266	u	< 0.1205	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	< 0.094	u	< 0.089	u	< 0.085	u	< 0.097	u	< 0.088	u	< 0.097	u	< 0.094	u	< 0.0873	u	< 0.0895	u	< 0.0799	u	< 0.9802	u	< 0.0929	u	< 0.0885	u	< 0.0897	u	< 0.0942	u	< 0.0897	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	< 0.094	u	< 0.089	u	< 0.085	u	< 0.097	u	< 0.088	u	< 0.097	u	< 0.094	u	< 0.0874	u	< 0.0897	u	< 0.0801	u	< 0.9815	u	< 0.093	u	< 0.0886	u	< 0.0898	u	< 0.0943	u	< 0.0898	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.7	v	< 0.13	u	< 0.13	u	< 0.15	u	< 0.13	u	< 0.15	u	< 0.14	u	< 0.1316	u	< 0.135	u	< 0.1205	u	8.5	v	1.9	v	< 0.1333	u	1.4	v	1.3	v	< 0.1351	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	17	v	< 0.094	u	< 0.09	u	< 0.1	u	< 0.094	u	< 0.1	u	< 0.1	u	< 0.0927	u	< 0.0951	u	< 0.0849	u	4.7	J	2.7	v	< 0.0939	u	0.53	v	0.17	J	< 0.0952	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	< 0.13	u	< 0.12	u	< 0.12	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.13	u	< 0.1195	u	< 0.1226	u	< 0.1095	u	< 1.3419	u	< 0.1272	u	< 0.1211	u	< 0.1228	u	< 0.1289	u	< 0.1227	u
2-Nitrophenol	-	-	-	-	< 0.12	u	< 0.11	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.11	u	< 0.1128	u	< 0.1007	u	< 1.2352	u	< 0.1171	u	< 0.1115	u	< 0.113	u	< 0.1187	u	< 0.113	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	< 0.088	u	< 0.083	u	< 0.079	u	< 0.091	u	< 0.083	u	< 0.09	u	< 0.088	u	< 0.0816	u	< 0.0837	u	< 0.0748	u	< 0.9167	u	< 0.0869	u	< 0.0827	u	< 0.0839	u	< 0.0881	u	< 0.0839	u
3+4-Methylphenol	-	-	-	-	26	v	< 0.082	u	< 0.078	u	< 0.089	u	< 0.081	u	< 0.089	u	< 0.087	u	< 0.0803	u	< 0.0823	u	< 0.0735	u	< 0.9014	u	3	v	< 0.0814	u	< 0.0825	u	< 0.0866	u	< 0.0824	u
3-Nitroaniline	-	-	-	-	< 0.11	u	< 0.099	u	< 0.095	u	< 0.11	u	< 0.099	u	< 0.11	u	< 0.11	u	< 0.0977	u	< 0.1003	u	< 0.0895	u	< 1.0975	u	< 0.104	u	< 0.0991	u	< 0.1004	u	< 0.1055	u	< 0.1004	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	< 0.072	u	< 0.068	u	< 0.065	u	< 0.075	u	< 0.068	u	< 0.074	u	< 0.072	u	< 0.0671	u	< 0.0688	u	< 0.0614	u	< 0.7529	u	< 0.0714	u	< 0.068	u	< 0.0689	u	< 0.0723	u	< 0.0689	u
4-Bromophenyl phenyl ether	-	-	-	-	< 0.11	u	< 0.11	u	< 0.1	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.106	u	< 0.1087	u	< 0.0971	u	< 1.1903	u	< 0.1128	u	< 0.1074	u	< 0.1089	u	< 0.1144	u	< 0.1089	u
4-Chloro-3-methylphenol	-	-	-	-	< 0.14	u	< 0.13	u	< 0.13	u	< 0.15	u	< 0.13	u	< 0.15	u	< 0.14	u	< 0.1323	u	< 0.1357	u	< 0.1212	u	< 1.4854	u	< 0.1408	u	< 0.1341	u	< 0.1359	u	< 0.1427	u	< 0.1359	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	< 0.13	u	< 0.12	u	< 0.12	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.13	u	< 0.1205	u	< 0.1236	u	< 0.1104	u	< 1.3535	u	< 0.1283	u	< 0.1222	u	< 0.1238	u	< 0.13	u	< 0.1238	u
4-Chlorophenyl phenyl ether	-	-	-	-	< 0.14	u	< 0.13	u	< 0.12	u	< 0.14	u	< 0.13	u	< 0.14	u	< 0.14	u	< 0.1267	u	< 0.1299	u	< 0.116	u	< 1.4225	u	< 0.1348	u	< 0.1284	u	< 0.1301	u	< 0.1367	u	< 0.1301	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	< 0.084	u	< 0.08	u	< 0.076	u	< 0.087	u	< 0.079	u	< 0.086	u	< 0.084	u	< 0.0782	u	< 0.0802	u	< 0.0716	u	< 0.8779	u	< 0.0832	u	< 0.0792	u	< 0.0803	u	< 0.0843	u	< 0.0803	u
4-Nitrophenol	-	-	-	-	< 0.091	u	< 0.086	u	< 0.082	u	< 0.094	u	< 0.085	u	< 0.093	u	< 0.091	u	< 0.0845	u	< 0.0866	u	< 0.0774	u	< 0.9484	u	< 0.0899	u	< 0.0856	u	< 0.0868	u	< 0.0911	u	< 0.0868	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	< 0.1	u	< 0.097	u	< 0.092	u	< 0.11	u	< 0.096	u	< 0.11	u	< 0.1	u	< 0.0951	u	< 0.0975	u	< 0.0871	u	< 1.0676	u	< 0.1012	u	< 0.0964	u	< 0.0977	u	< 0.1026	u	< 0.0977	u
Acenaphthylene	-	-	-	-	< 0.097	u	< 0.092	u	< 0.087	u	< 0.1	u	< 0.091	u	< 0.1	u	< 0.097	u	< 0.0902	u	< 0.0925	u	< 0.0826	u	< 1.0132	u	< 0.096	u	< 0.0915	u	< 0.0927	u	< 0.0973	u	< 0.0927	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	< 0.11	u	< 0.11	u	< 0.1	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.1048	u	< 0.1075	u	< 0.0959	u	< 1.1764	u	< 0.1115	u	< 0.1062	u	< 0.1076	u	< 0.113	u	< 0.1076	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	< 0.079	u	< 0.075	u	< 0.071	u	< 0.082	u	< 0.074	u	< 0.081	u	< 0.079	u	< 0.0736	u	< 0.0755	u	< 0.0674	u	< 0.8264	u	< 0.0783	u	< 0.0746	u	< 0.0756	u	< 0.0794	u	< 0.0756	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	< 0.15	u	< 0.14	u	< 0.13	u	< 0.15	u	< 0.14	u	< 0.15	u	< 0.15	u	< 0.1351	u	< 0.1386	u	< 0.1237	u	< 1.5172	u	< 0.1438	u	< 0.1369	u	< 0.1388	u	< 0.1458	u	< 0.1388	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	< 0.1	u	< 0.097	u	< 0.092	u	< 0.11	u	< 0.096	u	< 0.11	u	< 0.1	u	< 0.0955	u	< 0.0979	u	< 0.0874	u	< 1.0718	u	< 0.1016	u	< 0.0967	u	< 0.0981	u	< 0.103	u	< 0.098	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	< 0.09	u	< 0.085	u	< 0.081	u	< 0.093	u	< 0.085	u	< 0.093	u	< 0.091	u	< 0.084	u	< 0.0861	u	< 0.0769	u	< 0.9427	u	< 0.0893	u	< 0.0851	u	< 0.0862	u	< 0.0906	u	< 0.0862	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	< 0.11	u	< 0.1	u	< 0.097	u	< 0.11	u	< 0.1	u	< 0.11	u	< 0.11	u	< 0.1001	u	< 0.1027	u	< 0.0917	u	< 1.1244	u	< 0.1066	u	< 0.1015	u	< 0.1029	u	< 0.108	u	< 0.1028	u
Benzo(g,h,i)perylene	-	-	-	-	< 0.11	u	< 0.1	u	< 0.095	u	< 0.11	u	< 0.099	u	< 0.11	u	< 0.11	u	< 0.0978	u	< 0.1003	u	< 0.0895	u	< 1.0978	u	< 0.104	u	< 0.0991	u	< 0.1004	u	< 0.1055	u	< 0.1004	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	< 0.11	u	< 0.099	u	< 0.095	u	< 0.11	u	< 0.099	u	< 0.11	u	< 0.11	u	< 0.0977	u	< 0.1002	u	< 0.0895	u	< 1.0968	u	< 0.1039	u	< 0.099	u	< 0.1003	u	< 0.1054	u	< 0.1003	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	< 0.099	u	< 0.094	u	< 0.089	u	< 0.1	u	< 0.093	u	< 0.1	u	< 0.099	u	< 0.0919	u	< 0.0943	u	< 0.0842	u	1.6	J	0.23	J	< 0.0932	u	0.21	J	0.21	J	< 0.0944	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	< 0.094	u	< 0.088	u	< 0.084	u	< 0.097	u	< 0.088	u	< 0.096	u	< 0.094	u	< 0.0868	u	< 0.089	u	< 0.0795	u	< 0.9746	u	< 0.0924	u	< 0.088	u	< 0.0892	u	< 0.0936	u	< 0.0891	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	< 0.13	u	< 0.12	u	< 0.12	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.13	u	< 0.1203	u	< 0.1234	u	< 0.1102	u	< 1.3509	u	< 0.128	u	< 0.1219	u	< 0.1236	u	< 0.1298	u	< 0.1236	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	< 0.088	u	< 0.083	u	< 0.079	u	< 0.091	u	< 0.082	u	< 0.09	u	< 0.088	u	< 0.0815	u	< 0.0836	u	< 0.0746	u	< 0.9148	u	< 0.0867	u	< 0.0826	u	< 0.0837	u	< 0.0879	u	< 0.0837	u
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	< 0.11	u	< 0.1	u	< 0.096	u	< 0.11	u	< 0.1	u	< 0.11	u	< 0.11	u	< 0.099	u	< 0.1015	u	< 0.0907	u	< 1.1116	u	< 0.1054	u	< 0.1003	u	< 0.1017	u	< 0.1068	u	< 0.1017	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	< 0.097	u	< 0.092	u	0.17	J	0.14	J	0.12	J	0.19	J	0.17	J	0.15	J	0.17	J	0.16	J	< 1.0143	u	0.23	J	0.16	J	0.22	J	0.16	J	0.17	J

Table 7
SWMU 10 Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	SWMU 10-20 (16-18')		SWMU 10-20 (20-22')		SWMU 10-21 (2-2.5')		SWMU 10-21 (12-14')		SWMU 10-21 (20-22')		SWMU 10-22 (2-2.5')		SWMU 10-22 (8-9')		SWMU 10-23 (2-2.5')		SWMU 10-23 (15-16')		SWMU 10-24 (2-2.5')		SWMU 10-24 (6-8')		SWMU 10-24 (8-10')		SWMU 10-24 (15-16')		SWMU 10-25 (2-2.5')		SWMU 10-25 (10-12')		SWMU 10-25 (16.5-18')	
					1605875-003		1605875-004		1605943-001		1605943-002		1605943-003		1605943-004		1605943-005		1609B57-001		1609B57-002		1609B57-003		1609B57-004		1609B57-005		1609B57-006		1609B57-007		1609B57-008		1609B57-009	
					5/17/2016		5/17/2016		5/18/2016		5/18/2016		5/18/2016		5/18/2016		5/18/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016		9/19/2016	
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	< 0.11	u	< 0.1	u	< 0.095	u	< 0.11	u	< 0.099	u	< 0.11	u	< 0.11	u	< 0.0982	u	< 0.1007	u	< 0.0899	u	< 1.1022	u	< 0.1045	u	< 0.0995	u	< 0.1008	u	< 0.1059	u	< 0.1008	u
Carbazole	-	-	-	-	< 0.081	u	< 0.076	u	< 0.073	u	< 0.083	u	< 0.076	u	< 0.083	u	< 0.081	u	< 0.0749	u	< 0.0768	u	< 0.0686	u	< 0.8407	u	< 0.0797	u	< 0.0759	u	< 0.0769	u	< 0.0808	u	< 0.0769	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	< 0.1	u	< 0.096	u	< 0.091	u	< 0.11	u	< 0.095	u	< 0.1	u	< 0.1	u	< 0.0944	u	< 0.0968	u	< 0.0865	u	< 1.0601	u	< 0.1005	u	< 0.0957	u	< 0.097	u	< 0.1019	u	< 0.097	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	< 0.097	u	< 0.091	u	< 0.087	u	< 0.1	u	< 0.091	u	< 0.099	u	< 0.097	u	< 0.0897	u	< 0.092	u	< 0.0821	u	< 1.0067	u	< 0.0954	u	< 0.0909	u	< 0.0921	u	< 0.0967	u	< 0.0921	u
Dibenzofuran	-	-	-	-	< 0.12	u	< 0.11	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.1115	u	< 0.1144	u	< 0.1021	u	< 1.2522	u	< 0.1187	u	< 0.113	u	< 0.1146	u	< 0.1203	u	< 0.1145	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	< 0.12	u	< 0.11	u	< 0.11	u	< 0.13	u	< 0.11	u	< 0.12	u	< 0.12	u	0.22	J	0.22	J	0.2	v	< 1.2625	u	0.23	J	0.18	J	0.28	v	0.21	J	0.24	v
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	< 0.12	u	< 0.11	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.1085	u	< 0.1112	u	< 0.0993	u	< 1.2179	u	< 0.1154	u	< 0.1099	u	< 0.1114	u	< 0.117	u	< 0.1114	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	< 0.089	u	< 0.084	u	< 0.08	u	0.11	J	< 0.084	u	0.12	J	0.11	J	0.22	J	0.25	J	0.22	J	< 0.931	u	0.28	J	0.15	J	0.35	J	0.22	J	0.35	J
Di-n-octyl phthalate	-	-	-	-	< 0.1	u	< 0.096	u	< 0.092	u	< 0.11	u	< 0.096	u	< 0.1	u	< 0.1	u	< 0.0946	u	< 0.097	u	< 0.0866	u	< 1.062	u	< 0.1007	u	< 0.0959	u	< 0.0972	u	< 0.102	u	< 0.0971	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	< 0.069	u	< 0.065	u	< 0.062	u	< 0.071	u	< 0.065	u	< 0.071	u	< 0.069	u	< 0.0639	u	< 0.0655	u	< 0.0585	u	< 0.7171	u	< 0.068	u	< 0.0647	u	< 0.0656	u	< 0.0689	u	< 0.0656	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	0.49	v	< 0.1	u	< 0.098	u	< 0.11	u	< 0.1	u	< 0.11	u	< 0.11	u	< 0.1015	u	< 0.1041	u	< 0.0929	u	< 1.1396	u	0.16	J	< 0.1029	u	0.19	J	0.15	J	< 0.1042	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	< 0.094	u	< 0.089	u	< 0.085	u	< 0.097	u	< 0.088	u	< 0.097	u	< 0.094	u	< 0.0874	u	< 0.0897	u	< 0.0801	u	< 0.9817	u	< 0.093	u	< 0.0886	u	< 0.0898	u	< 0.0943	u	< 0.0898	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	< 0.13	u	< 0.13	u	< 0.12	u	< 0.14	u	< 0.13	u	< 0.14	u	< 0.13	u	< 0.125	u	< 0.1282	u	< 0.1144	u	< 1.403	u	< 0.133	u	< 0.1266	u	< 0.1284	u	< 0.1348	u	< 0.1283	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	< 0.14	u	< 0.13	u	< 0.12	u	< 0.14	u	< 0.13	u	< 0.14	u	< 0.14	u	< 0.1268	u	< 0.13	u	< 0.1161	u	< 1.4234	u	< 0.1349	u	< 0.1285	u	< 0.1302	u	< 0.1368	u	< 0.1302	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	< 0.1	u	< 0.097	u	< 0.092	u	< 0.11	u	< 0.096	u	< 0.11	u	< 0.1	u	< 0.0953	u	< 0.0977	u	< 0.0872	u	< 1.0696	u	< 0.1014	u	< 0.0965	u	< 0.0979	u	< 0.1028	u	< 0.0978	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	< 0.093	u	< 0.088	u	< 0.084	u	< 0.096	u	< 0.087	u	< 0.096	u	< 0.093	u	< 0.0866	u	< 0.0888	u	< 0.0793	u	< 0.9722	u	< 0.0921	u	< 0.0878	u	< 0.0889	u	< 0.0934	u	< 0.0889	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	0.73	v	< 0.11	u	< 0.1	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.11	u	< 0.1064	u	< 0.1092	u	< 0.0975	u	1.9	J	0.39	v	< 0.1079	u	0.28	v	0.28	v	< 0.1093	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	< 0.12	u	< 0.12	u	< 0.11	u	< 0.13	u	< 0.12	u	< 0.13	u	< 0.12	u	< 0.1144	u	< 0.1174	u	< 0.1048	u	< 1.2848	u	< 0.1218	u	< 0.116	u	< 0.1175	u	< 0.1234	u	< 0.1175	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	< 0.11	u	< 0.11	u	< 0.1	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.1066	u	< 0.1093	u	< 0.0976	u	< 1.1965	u	< 0.1134	u	< 0.108	u	< 0.1095	u	< 0.115	u	< 0.1094	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	< 0.12	u	< 0.11	u	< 0.1	u	< 0.12	u	< 0.11	u	< 0.12	u	< 0.12	u	< 0.1083	u	< 0.1111	u	< 0.0992	u	< 1.2158	u	< 0.1152	u	< 0.1097	u	< 0.1112	u	< 0.1168	u	< 0.1112	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	< 0.077	u	< 0.073	u	< 0.069	u	< 0.079	u	< 0.072	u	< 0.079	u	< 0.077	u	< 0.0713	u	< 0.0731	u	< 0.0653	u	< 0.8002	u	< 0.0758	u	< 0.0722	u	< 0.0732	u	< 0.0769	u	< 0.0732	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	1	v	< 0.077	u	< 0.073	u	< 0.084	u	< 0.076	u	< 0.083	u	< 0.081	u	< 0.0753	u	< 0.0773	u	< 0.069	u	1.4	J	0.32	v	< 0.0763	u	0.39	v	0.29	v	< 0.0774	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	18	v	< 0.085	u	< 0.081	u	< 0.093	u	< 0.084	u	< 0.092	u	< 0.09	u	< 0.0835	u	< 0.0857	u	< 0.0765	u	< 0.9377	u	1.4	v	< 0.0846	u	< 0.0858	u	< 0.0901	u	< 0.0858	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	0.13	J	< 0.085	u	< 0.081	u	< 0.093	u	< 0.085	u	< 0.093	u	< 0.09	u	< 0.0838	u	< 0.0859	u	< 0.0767	u	< 0.9408	u	< 0.0892	u	< 0.0849	u	< 0.0861	u	< 0.0904	u	< 0.0861	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	< 0.095	u	< 0.089	u	< 0.085	u	< 0.098	u	< 0.089	u	< 0.097	u	< 0.095	u	< 0.0879	u	< 0.0901	u	< 0.0805	u	< 0.9869	u	< 0.0935	u	< 0.0891	u	< 0.0903	u	< 0.0948	u	< 0.0903	u
Total Petroleum Hydrocarbons (mg/kg)																																				
Gasoline Range Organics (GRO)	-		-		220	v	< 0.5213	u	2	J	0.6	J	0.76	J	0.6	J	0.73	J	< 0.55	u	< 0.51	u	< 0.47	u	360	v	110	v	< 0.57	u	730	v	15	v	1.5	J
Diesel Range Organics (DRO)	1.00E+03	(9)	3.80E+03	(9)	380	v	< 3.7	u	32	v	< 4.5	u	< 3.8	u	< 4.5	u	< 4.1	u	< 2.1	u	< 2	u	< 1.8	u	650	v	190	v	2.9	J	790	v	96	v	4.5	J
Motor Oil Range Organics (MRO)	1.00E+03	(9)	3.80E+03	(9)	< 57	u	< 52	u	< 52	u	< 62	u	< 53	u	< 62	u	< 57	u	< 56	u	< 55	u	< 50	u	69	v	< 60	u	< 53	u	100	v	< 57	u	< 56	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (July
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
() NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels9

Bold with yellow highlight value exceeds Residential Screening Level

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003
v = reportable detection above the Practical quantitation limit (PQL)
u - result is not detected at method detection limit (MDL)
j - estimated result at concentration above MDL but less than PQL

Table 8
SWMU 10 Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW		SWMU 10-20-GW		SWMU 10-21-GW		SWMU 10-25-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001		1605998-001		1605998-003		1609C66-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/20/2016		5/20/2016		9/21/2016	
Metals (mg/l) TOTAL																								
Antimony	0.006	(2)	0.0011	v	0.0013	J	0.0008	J	< 0.002	u	< 0.002	u	< 0.002	u	< 0.002	u	NA		< 0.002	u	NA		0.00056	J
Arsenic	0.01	(2)	0.008	J	< 0.022	u	< 0.015	u	**0.016**	Z	**0.023**	Z	**0.029**	Z	**0.012**	Z	NA		**0.026**	Z	NA		**0.017**	Z
Barium	2	(2)	0.74	v	0.28	v	0.57	v	**5.3**	Z	**7.3**	Z	**7**	Z	0.37	v	NA		0.26	v	NA		1.1	v
Beryllium	0.004	(2)	0.0024	v	0.00091	J	0.0011	J	**0.017**	Z	**0.037**	Z	**0.035**	Z	0.0015	J	NA		0.0011	J	NA		0.00043	J
Cadmium	0.005	(2)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.005	u	< 0.005	u	< 0.001	u	NA		< 0.001	u	NA		< 0.001	u
Chromium	0.05	(3)	0.013	v	< 0.002	u	0.0051	J	**0.073**	v	**0.17**	Z	**0.15**	Z	0.0062	v	NA		0.03	v	NA		< 0.003	u
Hexavalent Chromium	0.000252	(4)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	NA		**0.0005**	v	NA		< 0.00015	u
Cobalt	0.006	(1)	**0.012**	v	0.0059	J	0.0056	J	**0.077**	v	**0.14**	v	**0.13**	v	**0.025**	v	NA		**0.011**	v	NA		0.0033	J
Iron	13.800	(4)	**16**	Z	2.6	Z	5.7	Z	**86**	Z	**140**	Z	**130**	Z	9.4	Z	NA		7.1	Z	NA		1.9	Z
Lead	0.015	(2)	**0.017**	Z	0.0024	J	0.0064	v	**0.18**	Z	**0.28**	Z	**0.24**	Z	0.014	v	NA		0.011	v	NA		0.0021	v
Manganese	2.020	(4)	1.2	Z	0.52	Z	0.69	Z	**13**	Z	**18**	Z	**22**	Z	**2.9**	Z	NA		1.4	Z	NA		**2.1**	Z
Mercury	0.002	(3)	<0.000059	u	<0.000059	u	<0.000059	u	0.00075	v	0.00039	v	0.00021	v	<0.000059	u	NA		0.00016	J	NA		0.000085	J
Nickel	0.372	(4)	0.19	Z	0.0067	J	0.0044	J	0.13	Z	0.26	Z	0.25	Z	**0.64**	Z	NA		0.026	v	NA		0.059	v
Selenium	0.05	(3)	0.021	J	0.036	J	0.036	J	0.0099	J	0.008	J	0.01	J	0.019	v	NA		0.04	v	NA		0.041	J
Silver	0.05	(3)	< 0.002	u	< 0.002	u	< 0.002	u	< 0.002	u	< 0.011	u	< 0.011	u	< 0.002	u	NA		< 0.003	u	NA		< 0.003	u
Vanadium	0.0631	(4)	0.028	J	0.01	J	0.013	J	**0.12**	v	**0.17**	J	**0.16**	J	0.019	J	NA		0.024	J	NA		0.0068	J
Zinc	10	(3)	0.071	v	0.023	v	0.034	v	0.19	v	0.45	v	0.36	v	0.046	v	NA		0.043	v	NA		0.0097	J
Metals (mg/l) DISSOLVED																								
Antimony (D)	0.006	(2)	0.00093	J	0.00074	J	< 0.001	u	< 0.001	u	0.00023	J	<0.00014	u	< 0.001	u	NA		< 0.002	u	NA		< 0.002	u
Arsenic (D)	0.01	(2)	0.01	J	**0.011**	J	**0.012**	J	0.0039	J	0.0025	v	0.003	v	**0.011**	J	NA		< 0.05	u	NA		**0.017**	Z
Barium (D)	1	(3)	0.45	v	0.23	v	0.32	v	0.24	v	0.085	v	0.18	v	0.22	v	NA		0.11	v	NA		**1.4**	v
Beryllium (D)	0.004	(2)	0.00052	J	0.0004	J	0.00042	J	<0.00031	u	<0.00031	u	0.0009	J	<0.00031	u	NA		< 0.0003	u	NA		< 0.0003	u
Cadmium (D)	0.005	(2)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	NA		< 0.001	u	NA		< 0.001	u
Chromium (D)	0.05	(3)	0.0045	J	0.0056	J	0.0039	J	0.0054	J	0.008	v	0.0075	v	0.0094	v	NA		< 0.002	u	NA		< 0.002	u
Cobalt (D)	0.05	(3)	0.0084	v	0.0081	v	0.0035	J	0.01	v	0.0044	J	0.0051	J	0.023	v	NA		0.0074	v	NA		0.0049	J
Iron (D)	1	(3)	0.58	Z	0.068	v	0.011	J	0.78	Z	**2.6**	Z	**3.9**	Z	0.61	Z	NA		0.42	Z	NA		0.23	v
Lead (D)	0.015	(2)	0.001	J	<0.00013	u	<0.00013	u	0.00074	J	0.0014	v	0.0068	v	0.0026	J	NA		< 0.001	u	NA		< 0.0002	u
Manganese (D)	0.2	(3)	**0.93**	Z	**0.45**	Z	**0.27**	Z	**3.9**	Z	**0.91**	Z	**1.1**	Z	**2.4**	Z	NA		**1.2**	Z	NA		**2.1**	Z
Nickel (D)	0.372	(4)	0.21	Z	0.0053	J	0.0028	J	0.024	v	0.012	v	0.011	v	**0.65**	Z	NA		0.019	v	NA		0.076	v
Selenium (D)	0.05	(3)	0.03	v	0.041	J	0.036	J	0.0076	J	0.003	v	0.0031	v	0.02	v	NA		0.038	J	NA		0.039	v
Silver (D)	0.05	(3)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	NA		< 0.003	u	NA		< 0.003	u
Vanadium (D)	0.0631	(4)	0.0045	J	0.0048	J	0.002	J	0.0052	J	0.011	J	0.016	J	0.0057	J	NA		0.01	J	NA		0.003	J
Zinc (D)	10	(3)	0.029	v	0.033	v	0.038	v	0.049	v	0.062	v	0.014	v	0.15	v	NA		0.046	v	NA		0.0049	J
Anions (mg/l)																								
Chloride	250	(3)	**3600**	v	**7100**	v	**2800**	v	**2000**	v	**330**	v	**370**	v	**2300**	v	NA		**1600**	v	NA		**1800**	v
Fluoride	1.6	(3)	< 0.58	u	< 0.29	u	< 0.029	u	< 0.145	u	1.2	v	1.3	v	0.55	v	NA		< 0.113	u	NA		< 0.25	u
Sulfate	600	(3)	340	v	**1100**	v	310	v	380	v	370	v	370	v	440	v	NA		260	v	NA		110	v
Cyanide (mg/l)																								
Cyanide	0.2	(3)	0.046	v	0.14	v	0.013	v	< 0.005	u	< 0.005	u	< 0.005	u	0.055	v	NA		**1.05**	v	NA		0.143	v
Volatiles (ug/l)																								
1,1,1,2-Tetrachloroethane	5.72	(4)	< 0.11	u	< 0.11	u	< 0.11	u	< 0.221	u	< 0.221	u	< 0.221	u	< 0.221	u	< 0.11	u	< 1.115	u	< 0.111	u	< 5.573	u
1,1,1-Trichloroethane	60	(3)	< 0.078	u	< 0.078	u	< 0.078	u	< 0.155	u	< 0.155	u	< 0.155	u	< 0.155	u	< 0.078	u	< 0.915	u	< 0.091	u	< 4.575	u
1,1,2,2-Tetrachloroethane	10	(3)	< 0.18	u	< 0.18	u	< 0.18	u	< 0.359	u	< 0.359	u	< 0.359	u	< 0.359	u	< 0.18	u	< 1.282	u	< 0.128	u	< 6.412	u
1,1,2-Trichloroethane	5	(2)	< 0.079	u	< 0.079	u	< 0.079	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.079	u	< 1.273	u	< 0.127	u	< 6.366	u
1,1-Dichloroethane	25	(3)	< 0.4	u	< 0.4	u	< 0.4	u	0.93	J	< 0.8	u	< 0.8	u	< 0.8	u	3.1	v	6.1	J	< 0.108	u	< 5.403	u
1,1-Dichloroethene	5	(3)	< 0.099	u	< 0.099	u	0.12	J	< 0.199	u	< 0.199	u	< 0.199	u	< 0.199	u	0.73	J	< 1.072	u	< 0.107	u	< 5.361	u
1,1-Dichloropropene	-		< 0.115	u	< 0.115	u	< 0.115	u	< 0.23	u	< 0.23	u	< 0.23	u	< 0.23	u	< 0.115	u	< 1.331	u	< 0.133	u	< 6.656	u
1,2,3-Trichlorobenzene	-		< 0.266	u	< 0.266	u	< 0.266	u	< 0.533	u	< 0.533	u	< 0.533	u	< 0.533	u	< 0.266	u	< 1.129	u	< 0.113	u	< 5.643	u
1,2,3-Trichloropropane	0.00747	(4)	< 0.158	u	< 0.158	u	< 0.158	u	< 0.317	u	< 0.317	u	< 0.317	u	< 0.317	u	< 0.158	u	< 2.02	u	< 0.202	u	< 10.1	u
1,2,4-Trichlorobenzene (V)	70	(2)	< 0.283	u	< 0.283	u	< 0.283	u	< 0.565	u	< 0.565	u	< 0.565	u	< 0.565	u	< 0.283	u	< 1.328	u	< 0.133	u	< 6.639	u

Table 8
SWMU 10 Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW		SWMU 10-20-GW		SWMU 10-21-GW		SWMU 10-25-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001		1605998-001		1605998-003		1609C66-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/20/2016		5/20/2016		9/21/2016	
1,2,4-Trimethylbenzene	15	(1)	< 0.159	u	< 0.159	u	3.7	v	**64**	v	0.66	J	0.44	J	< 0.319	u	0.18	J	**220**	v	0.5	J	**170**	v
1,2-Dibromo-3-chloropropane	0.2	(2)	< 0.136	u	< 0.136	u	< 0.136	u	< 0.272	u	< 0.272	u	< 0.272	u	< 0.272	u	< 0.136	u	< 2.343	u	< 0.234	u	< 11.717	u
1,2-Dibromoethane (EDB)	0.05	(2)	< 0.134	u	< 0.134	u	< 0.134	u	< 0.267	u	< 0.267	u	< 0.267	u	< 0.267	u	< 0.134	u	< 1.118	u	< 0.112	u	< 5.589	u
1,2-Dichlorobenzene (V)	600	(2)	< 0.118	u	< 0.118	u	< 0.118	u	< 0.237	u	< 0.237	u	< 0.237	u	< 0.237	u	< 0.118	u	< 4	u	< 0.4	u	< 20	u
1,2-Dichloroethane (EDC)	5	(2)	< 0.176	u	0.48	J	0.32	J	< 0.353	u	< 0.353	u	< 0.353	u	< 0.353	u	0.47	J	< 1.15	u	< 0.115	u	< 5.751	u
1,2-Dichloropropane	5	(2)	< 0.151	u	< 0.151	u	< 0.151	u	< 0.302	u	< 0.302	u	< 0.302	u	< 0.302	u	< 0.151	u	< 1.098	u	< 0.11	u	< 5.491	u
1,3,5-Trimethylbenzene	12	(1)	< 0.123	u	< 0.123	u	3.9	v	**22**	v	< 0.246	u	< 0.246	u	< 0.246	u	< 0.123	u	**64**	v	< 0.115	u	**46**	J
1,3-Dichlorobenzene (V)	-		< 0.093	u	< 0.093	u	< 0.093	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.093	u	< 1.432	u	< 0.143	u	< 7.159	u
1,3-Dichloropropane	370	(1)	< 0.172	u	< 0.172	u	< 0.172	u	< 0.344	u	< 0.344	u	< 0.344	u	< 0.344	u	< 0.172	u	< 1.557	u	< 0.156	u	< 7.786	u
1,4-Dichlorobenzene (V)	75	(2)	< 0.166	u	< 0.166	u	< 0.166	u	< 0.332	u	< 0.332	u	< 0.332	u	< 0.332	u	< 0.166	u	< 1.427	u	< 0.143	u	< 7.133	u
1-Methylnaphthalene (V)	11	(5)	< 0.538	u	< 0.538	u	3.1	J	**70**	v	< 1.077	u	< 1.077	u	< 1.077	u	< 0.538	u	**140**	v	3.9	J	**110**	J
2,2-Dichloropropane	-		< 0.152	u	< 0.152	u	< 0.152	u	< 0.303	u	< 0.303	u	< 0.303	u	< 0.303	u	< 0.152	u	< 1.666	u	< 0.167	u	< 8.332	u
2-Butanone	5560	(4)	< 0.363	u	1.4	J	< 0.363	u	< 0.725	u	< 0.725	u	< 0.725	u	2.9	J	< 0.363	u	630	v	5.7	J	< 36.85	u
2-Chlorotoluene	240	(1)	< 0.079	u	< 0.079	u	< 0.079	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.079	u	< 4	u	< 0.4	u	< 20	u
2-Hexanone	-		< 0.477	u	< 0.477	u	< 0.477	u	< 0.953	u	< 0.953	u	< 0.953	u	< 0.953	u	< 0.477	u	69	J	3.2	J	< 41.993	u
2-Methylnaphthalene (V)	36	(1)	< 0.594	u	< 0.594	u	3.8	J	**98**	v	1.5	J	< 1.189	u	< 1.189	u	< 0.594	u	**210**	v	4.9	v	**140**	J
4-Chlorotoluene	250	(1)	< 0.149	u	< 0.149	u	< 0.149	u	< 0.299	u	< 0.299	u	< 0.299	u	< 0.299	u	< 0.149	u	< 1.281	u	< 0.128	u	< 6.407	u
4-Isopropyltoluene	-		< 0.189	u	< 0.189	u	0.92	J	2.7	v	< 0.377	u	< 0.377	u	< 0.377	u	< 0.189	u	2.5	J	< 0.141	u	< 7.031	u
4-Methyl-2-pentanone	-		< 0.257	u	< 0.257	u	0.61	J	< 0.513	u	< 0.513	u	< 0.513	u	< 0.513	u	< 0.257	u	63	J	2.4	J	< 21.382	u
Acetone	14100	(4)	< 0.936	u	< 0.936	u	< 0.936	u	8.8	J	3.4	J	2.7	J	9.7	J	1.6	J	1400	v	20	v	< 245.437	u
Benzene	5	(2)	4.7	v	2.9	v	**27**	v	2.5	v	0.47	J	0.47	J	0.51	J	0.24	J	**1600**	v	0.15	J	**320**	v
Bromobenzene	62	(1)	< 0.108	u	< 0.108	u	< 0.108	u	< 0.216	u	< 0.216	u	< 0.216	u	< 0.216	u	< 0.108	u	< 0.977	u	< 0.098	u	< 4.885	u
Bromodichloromethane	1.34	(4)	< 0.09	u	< 0.09	u	< 0.09	u	< 0.179	u	< 0.179	u	< 0.179	u	< 0.179	u	< 0.09	u	< 1.398	u	**1.8**	v	< 6.989	u
Bromoform	33	(5)	< 0.162	u	< 0.162	u	< 0.162	u	< 0.325	u	< 0.325	u	< 0.325	u	< 0.325	u	< 0.162	u	< 1.021	u	0.16	J	< 5.107	u
Bromomethane	7.54	(4)	< 1.161	u	< 1.161	u	< 1.161	u	< 2.322	u	< 2.322	u	< 2.322	u	< 2.322	u	< 1.161	u	< 7.799	u	< 0.78	u	< 38.994	u
Carbon disulfide	810	(4)	< 0.673	u	< 0.673	u	< 0.673	u	< 1.346	u	< 1.346	u	< 1.346	u	< 1.346	u	< 0.673	u	< 5.975	u	< 0.597	u	< 29.874	u
Carbon Tetrachloride	5	(2)	< 0.078	u	< 0.078	u	< 0.078	u	< 0.156	u	< 0.156	u	< 0.156	u	< 0.156	u	< 0.078	u	< 1.082	u	< 0.108	u	< 5.41	u
Chlorobenzene	100	(2)	< 0.093	u	< 0.093	u	< 0.093	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.093	u	< 1.145	u	< 0.114	u	< 5.723	u
Chloroethane	20900	(4)	< 0.105	u	< 0.105	u	< 0.105	u	< 0.209	u	< 0.209	u	< 0.209	u	< 0.209	u	< 0.105	u	< 1.91	u	< 0.191	u	< 9.551	u
Chloroform	100	(3)	< 0.215	u	< 0.215	u	< 0.215	u	< 0.43	u	< 0.43	u	< 0.43	u	< 0.43	u	< 0.215	u	< 0.888	u	3.4	v	< 4.439	u
Chloromethane	20.3	(4)	< 0.174	u	< 0.174	u	< 0.174	u	< 0.347	u	< 0.347	u	< 0.347	u	< 0.347	u	< 0.174	u	< 2.128	u	< 0.213	u	< 10.64	u
cis-1,2-DCE	70	(2)	< 0.081	u	< 0.081	u	< 0.081	u	< 0.161	u	< 0.161	u	< 0.161	u	< 0.161	u	0.39	J	< 1.242	u	< 0.124	u	< 6.208	u
cis-1,3-Dichloropropene	4.7	(4)	< 0.133	u	< 0.133	u	< 0.133	u	< 0.266	u	< 0.266	u	< 0.266	u	< 0.266	u	< 0.133	u	< 1.065	u	< 0.107	u	< 5.327	u
Dibromochloromethane	1.68	(4)	< 0.097	u	< 0.097	u	< 0.097	u	< 0.194	u	< 0.194	u	< 0.194	u	< 0.194	u	< 0.097	u	< 0.867	u	1.3	v	< 4.337	u
Dibromomethane	8.3	(1)	< 0.234	u	< 0.234	u	< 0.234	u	< 0.469	u	< 0.469	u	< 0.469	u	< 0.469	u	< 0.234	u	< 1.191	u	< 0.119	u	< 5.957	u
Dichlorodifluoromethane	197	(4)	< 0.692	u	< 0.692	u	< 0.692	u	< 1.385	u	< 1.385	u	< 1.385	u	< 1.385	u	< 0.692	u	< 3.573	u	< 0.357	u	< 17.866	u
Ethylbenzene	700	(2)	< 0.101	u	< 0.101	u	1.6	v	40	v	< 0.202	u	< 0.202	u	< 0.202	u	< 0.101	u	290	v	< 0.112	u	200	v
Hexachlorobutadiene (V)	2.95	(4)	< 0.251	u	< 0.251	u	< 0.251	u	< 0.503	u	< 0.503	u	< 0.503	u	< 0.503	u	< 0.251	u	< 1.986	u	< 0.199	u	< 9.93	u
Isopropylbenzene	447	(4)	< 0.152	u	< 0.152	u	1.2	v	8.5	v	< 0.304	u	< 0.304	u	< 0.304	u	< 0.152	u	20	v	< 0.105	u	24	J
Methyl tert-butyl ether (MTBE)	143	(4)	6.1	v	5.5	v	< 0.174	u	14	v	13	v	16	v	**150**	v	19	v	3.8	J	0.8	J	17	J
Methylene Chloride	5	(2)	< 0.36	u	< 0.36	u	< 0.36	u	< 0.721	u	< 0.721	u	< 0.721	u	< 0.721	u	< 0.36	u	3.4	J	< 0.187	u	< 9.371	u
Naphthalene (V)	1.65	(4)	< 0.218	u	< 0.218	u	< 0.218	u	**45**	v	0.52	J	< 0.436	u	< 0.436	u	< 0.218	u	**310**	v	1.3	J	**200**	v
n-Butylbenzene	-		< 0.245	u	< 0.245	u	0.4	J	3.4	J	< 0.491	u	< 0.491	u	< 0.491	u	< 0.245	u	4	J	< 0.16	u	< 8.02	u
n-Propylbenzene	-		< 0.163	u	0.31	J	0.64	J	11	v	< 0.326	u	< 0.326	u	< 0.326	u	< 0.163	u	30	v	< 0.132	u	30	J
sec-Butylbenzene	-		< 0.229	u	< 0.229	u	0.6	J	2.2	v	< 0.457	u	< 0.457	u	< 0.457	u	< 0.229	u	1.7	J	< 0.123	u	12	J
Styrene	100	(2)	< 0.106	u	< 0.106	u	< 0.106	u	< 0.211	u	< 0.211	u	< 0.211	u	< 0.211	u	< 0.106	u	< 1.1	u	< 0.11	u	< 5.5	u
tert-Butylbenzene	-		< 0.129	u	< 0.129	u	< 0.129	u	< 0.259	u	< 0.259	u	< 0.259	u	< 0.259	u	< 0.129	u	< 1.15	u	< 0.115	u	< 5.75	u
Tetrachloroethene (PCE)	5	(2)	< 0.16	u	< 0.16	u	< 0.16	u	< 0.321	u	< 0.321	u	< 0.321	u	< 0.321	u	< 0.16	u	< 1.52	u	< 0.152	u	< 7.601	u
Toluene	750	(3)	< 0.108	u	< 0.108	u	2.7	v	6	v	< 0.217	u	0.3	J	< 0.217	u	< 0.108	u	**4000**	v	0.3	J	140	v
trans-1,2-DCE	100	(2)	< 0.094	u	< 0.094	u	< 0.094	u	< 0.188	u	< 0.188	u	< 0.188	u	< 0.188	u	< 0.094	u	< 4	u	< 0.4	u	< 20	u
trans-1,3-Dichloropropene	4.7	(4)	< 0.113	u	< 0.113	u	< 0.113	u	< 0.226	u	< 0.226	u	< 0.226	u	< 0.226	u	< 0.113	u	< 1.033	u	< 0.103	u	< 5.163	u

Table 8
SWMU 10 Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW		SWMU 10-20-GW		SWMU 10-21-GW		SWMU 10-25-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001		1605998-001		1605998-003		1609C66-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/20/2016		5/20/2016		9/21/2016	
Trichloroethene (TCE)	5	(2)	< 0.163	u	< 0.163	u	< 0.163	u	< 0.327	u	< 0.327	u	< 0.327	u	< 0.327	u	0.77	J	< 1.751	u	< 0.175	u	< 8.755	u
Trichlorofluoromethane	1140	(4)	< 0.127	u	< 0.127	u	< 0.127	u	< 0.254	u	< 0.254	u	< 0.254	u	< 0.254	u	< 0.127	u	< 2.044	u	< 0.204	u	< 10.218	u
Vinyl chloride	1	(3)	< 0.125	u	< 0.125	u	< 0.125	u	< 0.251	u	< 0.251	u	< 0.251	u	< 0.251	u	0.47	J	< 1.954	u	< 0.195	u	< 9.769	u
Xylenes, Total	620	(3)	< 0.282	u	< 0.282	u	13	v	230	v	< 0.565	u	< 0.565	u	< 0.565	u	0.35	J	**1900**	v	0.72	J	**1200**	v
Semivolatiles (ug/l)																								
1,2,4-Trichlorobenzene	70	(2)	< 1.993	u	< 1.993	u	< 1.993	u	< 3.987	u	< 3.987	u	< 3.987	u	< 1.993	u	< 1.993	u	< 130.984	u	< 13.098	u	< 2.62	u
1,2-Dichlorobenzene	600	(2)	< 1.899	u	< 1.899	u	< 1.899	u	< 3.798	u	< 3.798	u	< 3.798	u	< 1.899	u	< 1.899	u	< 114.254	u	< 11.425	u	< 2.285	u
1,3-Dichlorobenzene	-		< 1.69	u	< 1.69	u	< 1.69	u	< 3.381	u	< 3.381	u	< 3.381	u	< 1.69	u	< 1.69	u	< 112.848	u	< 11.285	u	< 2.257	u
1,4-Dichlorobenzene	75	(2)	< 1.234	u	< 1.234	u	< 1.234	u	< 2.468	u	< 2.468	u	< 2.468	u	< 1.234	u	< 1.234	u	< 119.407	u	< 11.941	u	< 2.388	u
1-Methylnaphthalene	11	(5)	< 1.801	u	< 1.801	u	< 1.801	u	**20**	J	< 3.603	u	< 3.603	u	< 1.801	u	< 1.801	u	**170**	J	< 14.589	u	**120**	v
2,4,5-Trichlorophenol	1170	(4)	< 1.617	u	< 1.617	u	< 1.617	u	< 3.233	u	< 3.233	u	< 3.233	u	< 1.617	u	< 1.617	u	< 108.993	u	< 10.899	u	< 2.18	u
2,4,6-Trichlorophenol	11.9	(4)	< 1.258	u	< 1.258	u	< 1.258	u	< 2.517	u	< 2.517	u	< 2.517	u	< 1.258	u	< 1.258	u	< 122.288	u	< 12.229	u	< 2.446	u
2,4-Dichlorophenol	45.3	(4)	< 1.395	u	< 1.395	u	< 1.395	u	< 2.79	u	< 2.79	u	< 2.79	u	< 1.395	u	< 1.395	u	< 116.521	u	< 11.652	u	< 2.33	u
2,4-Dimethylphenol	354	(4)	< 1.854	u	< 1.854	u	< 1.854	u	< 3.708	u	< 3.708	u	< 3.708	u	< 1.854	u	< 1.854	u	**62000**	v	< 15.048	u	**1100**	v
2,4-Dinitrophenol	38.8	(4)	< 1.07	u	< 1.07	u	< 1.07	u	< 2.139	u	< 2.139	u	< 2.139	u	< 1.07	u	< 1.07	u	< 137.673	u	< 13.767	u	< 2.753	u
2,4-Dinitrotoluene	2.37	(4)	< 1.434	u	< 1.434	u	< 1.434	u	< 2.868	u	< 2.868	u	< 2.868	u	< 1.434	u	< 1.434	u	< 156.474	u	< 15.647	u	< 3.129	u
2,6-Dinitrotoluene	0.484	(4)	< 1.49	u	< 1.49	u	< 1.49	u	< 2.981	u	< 2.981	u	< 2.981	u	< 1.49	u	< 1.49	u	< 136.691	u	< 13.669	u	< 2.734	u
2-Chloronaphthalene	733	(4)	< 1.716	u	< 1.716	u	< 1.716	u	< 3.431	u	< 3.431	u	< 3.431	u	< 1.716	u	< 1.716	u	< 112.551	u	< 11.255	u	< 2.251	u
2-Chlorophenol	91	(4)	< 1.204	u	< 1.204	u	< 1.204	u	< 2.408	u	< 2.408	u	< 2.408	u	< 1.204	u	< 1.204	u	< 109.186	u	< 10.919	u	< 2.184	u
2-Methylnaphthalene	36	(1)	< 2.246	u	< 2.246	u	< 2.246	u	16	J	< 4.492	u	< 4.492	u	< 2.246	u	< 2.246	u	**240**	J	< 14.451	u	**180**	v
2-Methylphenol	930	(1)	< 1.246	u	< 1.246	u	< 1.246	u	< 2.491	u	< 2.491	u	< 2.491	u	< 1.246	u	< 1.246	u	**130000**	v	< 12.696	u	**2600**	v
2-Nitroaniline	190	(1)	< 1.795	u	< 1.795	u	< 1.795	u	< 3.589	u	< 3.589	u	< 3.589	u	< 1.795	u	< 1.795	u	< 137.909	u	< 13.791	u	< 2.758	u
2-Nitrophenol	-		< 1.231	u	< 1.231	u	< 1.231	u	< 2.463	u	< 2.463	u	< 2.463	u	< 1.231	u	< 1.231	u	< 118.918	u	< 11.892	u	< 2.378	u
3,3´-Dichlorobenzidine	1.24	(4)	< 2.608	u	< 2.608	u	< 2.608	u	< 5.217	u	< 5.217	u	< 5.217	u	< 2.608	u	< 2.608	u	< 119.787	u	< 11.979	u	< 2.396	u
3+4-Methylphenol	930	(1)	< 1.475	u	< 1.475	u	< 1.475	u	< 2.951	u	< 2.951	u	< 2.951	u	< 1.475	u	< 1.475	u	**190000**	v	< 11.489	u	6.2	J
3-Nitroaniline	-		< 1.48	u	< 1.48	u	< 1.48	u	< 2.96	u	< 2.96	u	< 2.96	u	< 1.48	u	< 1.48	u	< 147.393	u	< 14.739	u	< 2.948	u
4,6-Dinitro-2-methylphenol	1.51	(4)	< 1.368	u	< 1.368	u	< 1.368	u	< 2.736	u	< 2.736	u	< 2.736	u	< 1.368	u	< 1.368	u	< 89.83	u	< 8.983	u	< 1.797	u
4-Bromophenyl phenyl ether	-		< 1.409	u	< 1.409	u	< 1.409	u	< 2.817	u	< 2.817	u	< 2.817	u	< 1.409	u	< 1.409	u	< 131.835	u	< 13.183	u	< 2.637	u
4-Chloro-3-methylphenol	-		< 1.351	u	< 1.351	u	< 1.351	u	< 2.701	u	< 2.701	u	< 2.701	u	< 1.351	u	< 1.351	u	< 127.938	u	< 12.794	u	< 2.559	u
4-Chloroaniline	3.7	(5)	< 1.874	u	< 1.874	u	< 1.874	u	< 3.748	u	< 3.748	u	< 3.748	u	< 1.874	u	< 1.874	u	< 135.609	u	< 13.561	u	< 2.712	u
4-Chlorophenyl phenyl ether	-		< 2.013	u	< 2.013	u	< 2.013	u	< 4.026	u	< 4.026	u	< 4.026	u	< 2.013	u	< 2.013	u	< 127.781	u	< 12.778	u	< 2.556	u
4-Nitroaniline	38	(5)	< 1.242	u	< 1.242	u	< 1.242	u	< 2.483	u	< 2.483	u	< 2.483	u	< 1.242	u	< 1.242	u	< 127.946	u	< 12.795	u	< 2.559	u
4-Nitrophenol	-		< 1.405	u	< 1.405	u	< 1.405	u	< 2.81	u	< 2.81	u	< 2.81	u	< 1.405	u	< 1.405	u	< 127.659	u	< 12.766	u	< 2.553	u
Acenaphthene	535	(4)	< 1.885	u	< 1.885	u	< 1.885	u	< 3.769	u	< 3.769	u	< 3.769	u	< 1.885	u	< 1.885	u	< 127.645	u	< 12.765	u	6.5	J
Acenaphthylene	-		< 1.866	u	< 1.866	u	< 1.866	u	< 3.732	u	< 3.732	u	< 3.732	u	< 1.866	u	< 1.866	u	< 117.837	u	< 11.784	u	< 2.357	u
Aniline	130	(5)	< 1.546	u	< 1.546	u	< 1.546	u	< 3.092	u	< 3.092	u	< 3.092	u	< 1.546	u	< 1.546	u	< 122.03	u	< 12.203	u	< 2.441	u
Anthracene	1720	(4)	< 1.605	u	< 1.605	u	< 1.605	u	< 3.21	u	< 3.21	u	< 3.21	u	< 1.605	u	< 1.605	u	< 124.299	u	< 12.43	u	< 2.486	u
Azobenzene	1.2	(5)	< 2.005	u	< 2.005	u	< 2.005	u	< 4.011	u	< 4.011	u	< 4.011	u	< 2.005	u	< 2.005	u	< 133.416	u	< 13.342	u	< 2.668	u
Benz(a)anthracene	0.343	(4)	< 2.506	u	< 2.506	u	< 2.506	u	< 5.013	u	< 5.013	u	< 5.013	u	< 2.506	u	< 2.506	u	< 131.964	u	< 13.196	u	< 2.639	u
Benzo(a)pyrene	0.2	(2)	< 2.724	u	< 2.724	u	< 2.724	u	< 5.448	u	< 5.448	u	< 5.448	u	< 2.724	u	< 2.724	u	< 135.887	u	< 13.589	u	< 2.718	u
Benzo(b)fluoranthene	0.343	(4)	< 2.403	u	< 2.403	u	< 2.403	u	< 4.806	u	< 4.806	u	< 4.806	u	< 2.403	u	< 2.403	u	< 144.006	u	< 14.401	u	< 2.88	u
Benzo(g,h,i)perylene	-		< 3.125	u	< 3.125	u	< 3.125	u	< 6.25	u	< 6.25	u	< 6.25	u	< 3.125	u	< 3.125	u	< 132.174	u	< 13.217	u	< 2.643	u
Benzo(k)fluoranthene	3.43	(4)	< 2.515	u	< 2.515	u	< 2.515	u	< 5.03	u	< 5.03	u	< 5.03	u	< 2.515	u	< 2.515	u	< 149.877	u	< 14.988	u	< 2.998	u
Benzoic acid	75000	(1)	< 1.026	u	< 1.026	u	< 1.026	u	< 2.051	u	< 2.051	u	< 2.051	u	< 1.026	u	7.1	J	< 130.301	u	< 13.03	u	< 2.606	u
Benzyl alcohol	2000	(1)	< 1.172	u	< 1.172	u	< 1.172	u	< 2.344	u	< 2.344	u	< 2.344	u	< 1.172	u	< 1.172	u	< 150.605	u	< 15.061	u	< 3.012	u
Bis(2-chloroethoxy)methane	59	(1)	< 1.805	u	< 1.805	u	< 1.805	u	< 3.61	u	< 3.61	u	< 3.61	u	< 1.805	u	< 1.805	u	< 140.68	u	< 14.068	u	< 2.814	u
Bis(2-chloroethyl)ether	9.76	(4)	< 1.774	u	< 1.774	u	< 1.774	u	< 3.547	u	< 3.547	u	< 3.547	u	< 1.774	u	< 1.774	u	< 133.677	u	< 13.368	u	< 2.674	u
Bis(2-chloroisopropyl)ether	9.76	(4)	< 2.059	u	< 2.059	u	< 2.059	u	< 4.119	u	< 4.119	u	< 4.119	u	< 2.059	u	< 2.059	u	< 95.445	u	< 9.545	u	< 1.909	u
Bis(2-ethylhexyl)phthalate	6	(2)	< 3.326	u	< 3.326	u	< 3.326	u	< 6.651	u	< 6.651	u	< 6.651	u	< 3.326	u	< 3.326	u	< 130.781	u	< 13.078	u	2.8	J
Butyl benzyl phthalate	160	(5)	< 2.37	u	< 2.37	u	< 2.37	u	< 4.74	u	< 4.74	u	< 4.74	u	< 2.37	u	< 2.37	u	< 123.904	u	< 12.39	u	< 2.478	u
Carbazole	-		< 1.49	u	< 1.49	u	< 1.49	u	< 2.98	u	< 2.98	u	< 2.98	u	< 1.49	u	< 1.49	u	< 114.364	u	< 11.436	u	3.2	J

Table 8
SWMU 10 Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW		SWMU 10-20-GW		SWMU 10-21-GW		SWMU 10-25-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001		1605998-001		1605998-003		1609C66-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/20/2016		5/20/2016		9/21/2016	
Chrysene	34.3	(4)	< 2.154	u	< 2.154	u	< 2.154	u	< 4.309	u	< 4.309	u	< 4.309	u	< 2.154	u	< 2.154	u	< 138.94	u	< 13.894	u	< 2.779	u
Dibenz(a,h)anthracene	0.106	(4)	< 3.268	u	< 3.268	u	< 3.268	u	< 6.537	u	< 6.537	u	< 6.537	u	< 3.268	u	< 3.268	u	< 133.056	u	< 13.306	u	< 2.661	u
Dibenzofuran	-		< 1.902	u	< 1.902	u	< 1.902	u	< 3.804	u	< 3.804	u	< 3.804	u	< 1.902	u	< 1.902	u	< 124.667	u	< 12.467	u	< 2.493	u
Diethyl phthalate	14800	(4)	< 1.673	u	< 1.673	u	< 1.673	u	< 3.347	u	< 3.347	u	< 3.347	u	< 1.673	u	< 1.673	u	< 135.726	u	< 13.573	u	< 2.715	u
Dimethyl phthalate	-		< 1.995	u	< 1.995	u	< 1.995	u	< 3.99	u	< 3.99	u	< 3.99	u	< 1.995	u	< 1.995	u	< 121.461	u	< 12.146	u	< 2.429	u
Di-n-butyl phthalate	885	(4)	< 2.103	u	< 2.103	u	< 2.103	u	< 4.206	u	< 4.206	u	< 4.206	u	< 2.103	u	< 2.103	u	< 122.177	u	< 12.218	u	< 2.444	u
Di-n-octyl phthalate	-		< 1.939	u	< 1.939	u	< 1.939	u	< 3.879	u	< 3.879	u	< 3.879	u	< 1.939	u	< 1.939	u	< 99.139	u	< 9.914	u	< 1.983	u
Fluoranthene	802	(4)	< 1.476	u	< 1.476	u	< 1.476	u	< 2.951	u	< 2.951	u	< 2.951	u	< 1.476	u	< 1.476	u	< 130.365	u	< 13.036	u	< 2.607	u
Fluorene	288	(4)	< 1.672	u	< 1.672	u	< 1.672	u	< 3.344	u	< 3.344	u	< 3.344	u	< 1.672	u	< 1.672	u	< 136.178	u	< 13.618	u	8.7	J
Hexachlorobenzene	1	(2)	< 2.022	u	< 2.022	u	< 2.022	u	< 4.045	u	< 4.045	u	< 4.045	u	< 2.022	u	< 2.022	u	< 131.654	u	< 13.165	u	< 2.633	u
Hexachlorobutadiene	2.95	(4)	< 1.949	u	< 1.949	u	< 1.949	u	< 3.898	u	< 3.898	u	< 3.898	u	< 1.949	u	< 1.949	u	< 109.224	u	< 10.922	u	< 2.184	u
Hexachlorocyclopentadiene	50	(2)	< 1.471	u	< 1.471	u	< 1.471	u	< 2.942	u	< 2.942	u	< 2.942	u	< 1.471	u	< 1.471	u	< 114.217	u	< 11.422	u	< 2.284	u
Hexachloroethane	6.8	(4)	< 1.612	u	< 1.612	u	< 1.612	u	< 3.224	u	< 3.224	u	< 3.224	u	< 1.612	u	< 1.612	u	< 118.423	u	< 11.842	u	< 2.368	u
Indeno(1,2,3-cd)pyrene	0.343	(4)	< 2.46	u	< 2.46	u	< 2.46	u	< 4.919	u	< 4.919	u	< 4.919	u	< 2.46	u	< 2.46	u	< 148.194	u	< 14.819	u	< 2.964	u
Isophorone	779	(4)	< 1.952	u	< 1.952	u	< 1.952	u	< 3.905	u	< 3.905	u	< 3.905	u	< 1.952	u	< 1.952	u	< 130.754	u	< 13.075	u	< 2.615	u
Naphthalene	1.65	(4)	< 1.834	u	< 1.834	u	< 1.834	u	**4.4**	J	< 3.667	u	< 3.667	u	< 1.834	u	< 1.834	u	**240**	J	< 12.988	u	**170**	v
Nitrobenzene	1.4	(4)	< 1.494	u	< 1.494	u	< 1.494	u	< 2.988	u	< 2.988	u	< 2.988	u	< 1.494	u	< 1.494	u	< 137.669	u	< 13.767	u	< 2.753	u
N-Nitrosodimethylamine	0.00165	(4)	< 1.417	u	< 1.417	u	< 1.417	u	< 2.834	u	< 2.834	u	< 2.834	u	< 1.417	u	< 1.417	u	< 107.9	u	< 10.79	u	< 2.158	u
N-Nitrosodi-n-propylamine	0.11	(5)	< 2.036	u	< 2.036	u	< 2.036	u	< 4.073	u	< 4.073	u	< 4.073	u	< 2.036	u	< 2.036	u	< 119.451	u	< 11.945	u	< 2.389	u
N-Nitrosodiphenylamine	0.0049	(4)	< 2.467	u	< 2.467	u	< 2.467	u	< 4.934	u	< 4.934	u	< 4.934	u	< 2.467	u	< 2.467	u	< 115.994	u	< 11.599	u	< 2.32	u
Phenanthrene	170	(4)	< 1.997	u	< 1.997	u	< 1.997	u	< 3.993	u	< 3.993	u	< 3.993	u	< 1.997	u	< 1.997	u	< 129.337	u	< 12.934	u	5.7	J
Pentachlorophenol	1	(2)	< 1.137	u	< 1.137	u	< 1.137	u	< 2.275	u	< 2.275	u	< 2.275	u	< 1.137	u	< 1.137	u	< 117.119	u	< 11.712	u	< 2.342	u
Phenol	5760	(4)	< 1.085	u	< 1.085	u	< 1.085	u	< 2.171	u	< 2.171	u	< 2.171	u	< 1.085	u	< 1.085	u	**89000**	v	< 9.926	u	< 1.985	u
Pyrene	117	(4)	< 2.318	u	< 2.318	u	< 2.318	u	< 4.636	u	< 4.636	u	< 4.636	u	< 2.318	u	< 2.318	u	< 154.722	u	< 15.472	u	< 3.094	u
Pyridine	20	(1)	< 1.674	u	< 1.674	u	< 1.674	u	< 3.348	u	< 3.348	u	< 3.348	u	< 1.674	u	< 1.674	u	< 108.027	u	< 10.803	u	< 2.161	u
TPH (mg/l)																								
Gasoline Range Organics (GRO)	-		0.028	J	0.033	J	0.21	v	1.5	v	< 0.08	u	< 0.08	u	0.78	v	< 0.04	u	25	v	0.047	J	8.6	v
Diesel Range Organics (DRO)	-		< 0.91	u	< 0.91	u	3.1	v	5.5	v	< 0.91	u	< 0.91	u	1	v	< 0.91	u	440	v	NA		20	v
Motor Oil Range Organics (MRO)	-		< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 50	u	NA		< 5	u

- No screening level or analytical result available

450 - bolded value exceeds screening level

(1) EPA - Regional Screening Levels (Nov. 2015) -Tap Water

(2) EPA - Regional Screening Levels (Nov. 2015) - MCL

(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)

(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

v = reportable detection above the Practical quantitation limit (PQL)

u - result is not detected at method detection limit (MDL)

j - estimated result at concentration above MDL but less than PQL

z - concentration exceeds MCL

NA - not analyzed

Figures

Figure 1 Site Location Map

Figure 2 SWMU No. 10 Location Map

Figure 3 SWMU No. 10 1990 RFI Sample Locations

Figure 4 SWMU No. 10 1994 RFI Sample Locations

Figure 5 Topographic Map

Figure 6 Geologic Map of New Mexico

Figure 7 Cross Section Location Map

Figure 8 Cross Section A-A' West to East

Figure 9 Cross Section B-B' North to South

Figure 10 Sand Isopach Map

Figure 11 Estimated Elevation Top of Bedrock

Figure 12 Potentiometric Surface Map

Figure 13 Arsenic Soils Concentration Map

Figure 14 Chromium Soils Concentration Map

Figure 15 Diesel Range Organics Soils Concentration Map

Figure 16 Motor Oil Range Organics Soils Concentration Map

Figure 17 Arsenic Groundwater Concentration Map

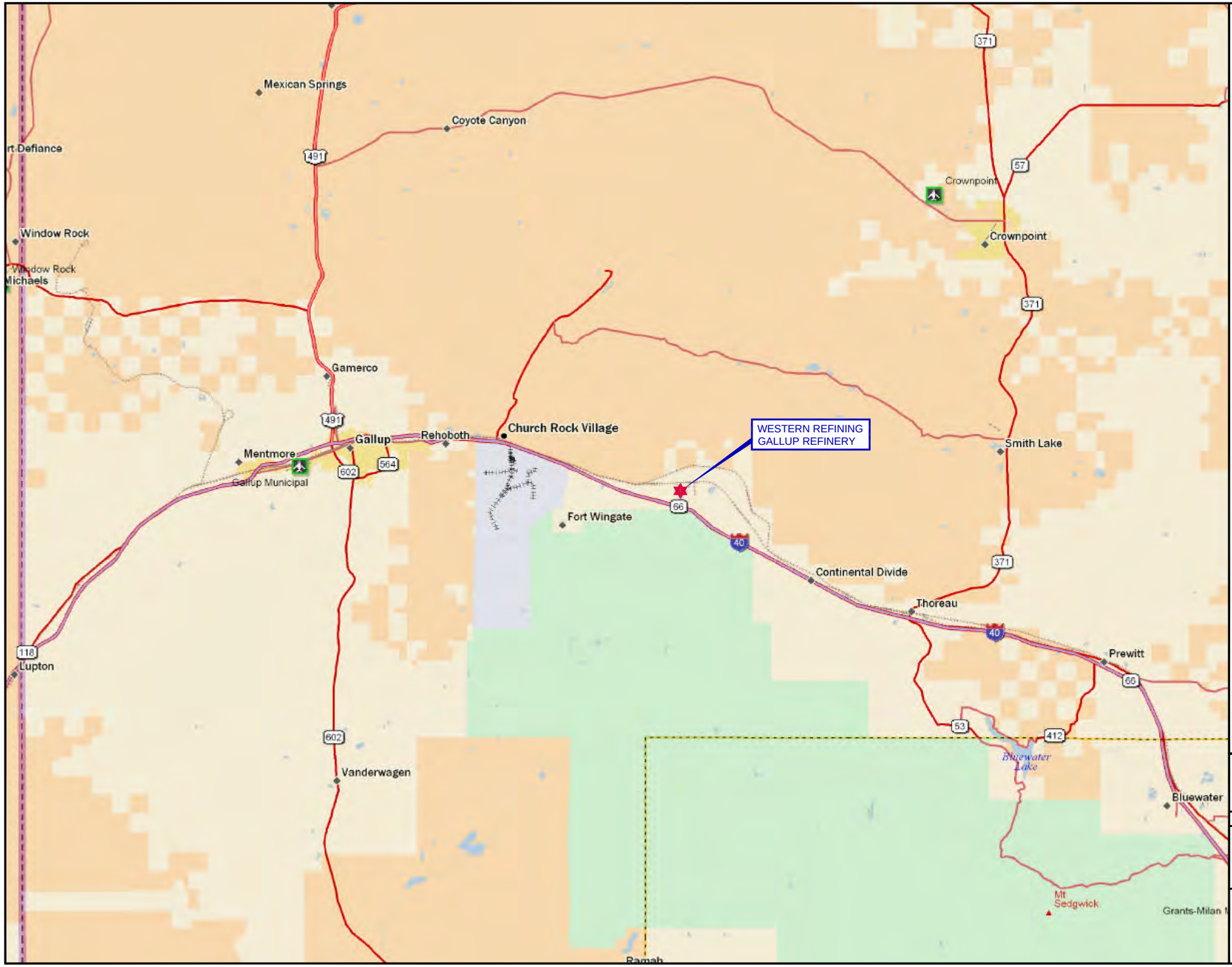
Figure 18 Barium Groundwater Concentration Map

Figure 19 Beryllium, Chromium, Hexavalent Chromium, and Cobalt Groundwater Concentration Map

Figure 20 Iron Groundwater Concentration Map

Figure 21 Lead and Manganese Groundwater Concentration Map
Figure 22 Nickel and Vanadium Groundwater Concentration Map
Figure 23 Chloride and Sulfate Groundwater Concentration Map
Figure 24 1,2,4-Trimethylbenzene Groundwater Concentration Map
Figure 25 1,3,5-Trimethlybenzene Groundwater Concentration Map
Figure 26 1-Methylnaphthalene Groundwater Concentration Map
Figure 27 2-Methylnaphthalene Groundwater Concentration Map
Figure 28 2,4-Dimethylphenol Groundwater Concentration Map
Figure 29 2-Methylphenol Groundwater Concentration Map
Figure 30 3+4-Methylphenol Groundwater Concentration Map
Figure 31 Benzene Groundwater Concentration Map
Figure 32 Bromodichloromethane Groundwater Concentration Map
Figure 33 MTBE Groundwater Concentration Map
Figure 34 Naphthalene Groundwater Concentration Map
Figure 35 Phenol Groundwater Concentration Map
Figure 36 Toluene Groundwater Concentration Map
Figure 37 Xylenes Groundwater Concentration Map

Map Source: DeLorme Street Atlas USA 2007 Plus.



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SCALE IN MILES

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:07/13/14 | FILE:WestRef-B198

FIGURE 1
SITE LOCATION MAP
GALLUP REFINERY

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Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 02/19/2014.

N

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SCALE IN FEET

LEGEND

SWMU No. 10 APPROXIMATE LOCATION

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB184

FIGURE 2
SWMU No. 10 LOCATION MAP

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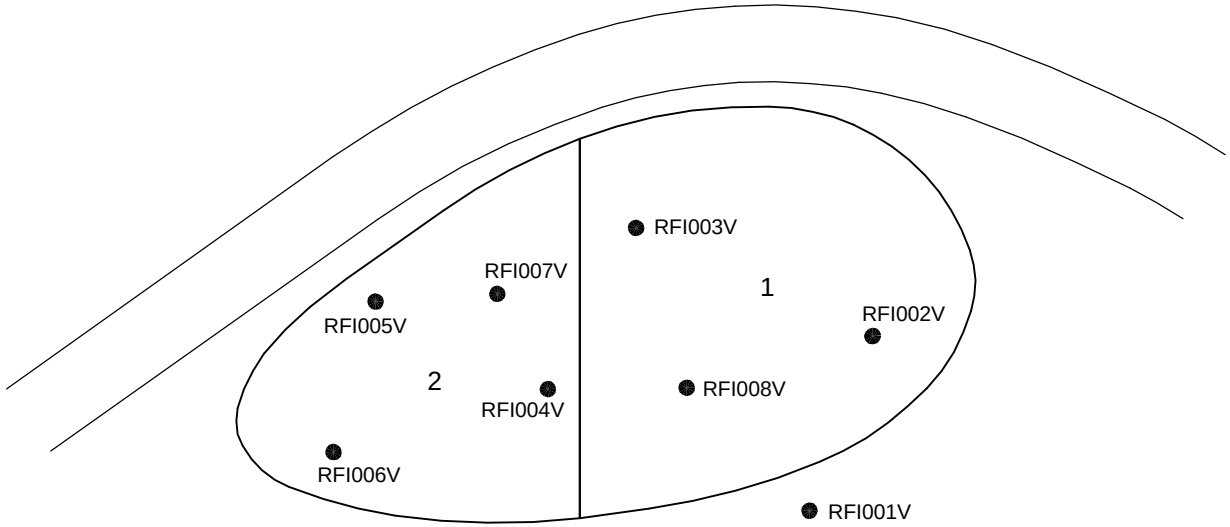
Suite 300
Austin, Texas 78759



Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:09/07/14 | FILE:WestRef-dA02

FIGURE 3
SWMU No. 10
1990 RFI SAMPLE LOCATIONS
GALLUP REFINERY

N

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SCALE IN FEET

LEGEND

RFI002V ● 1990 RFI SOIL BORING LOCATION AND IDENTIFICATION NUMBER

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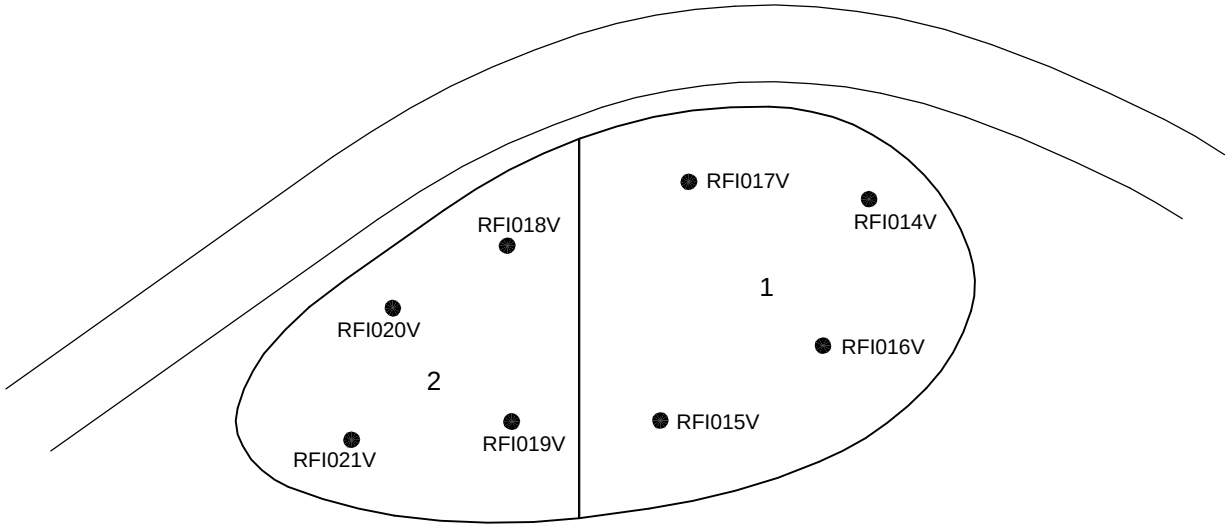
Austin, Texas 78759



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SCALE IN FEET

LEGEND

RFI014V ● 1994 RFI SOIL BORING LOCATION AND IDENTIFICATION NUMBER

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:09/07/14	FILE:WestRef-dA03

FIGURE 4
SWMU No. 10
1994 RFI SAMPLE LOCATIONS
GALLUP REFINERY

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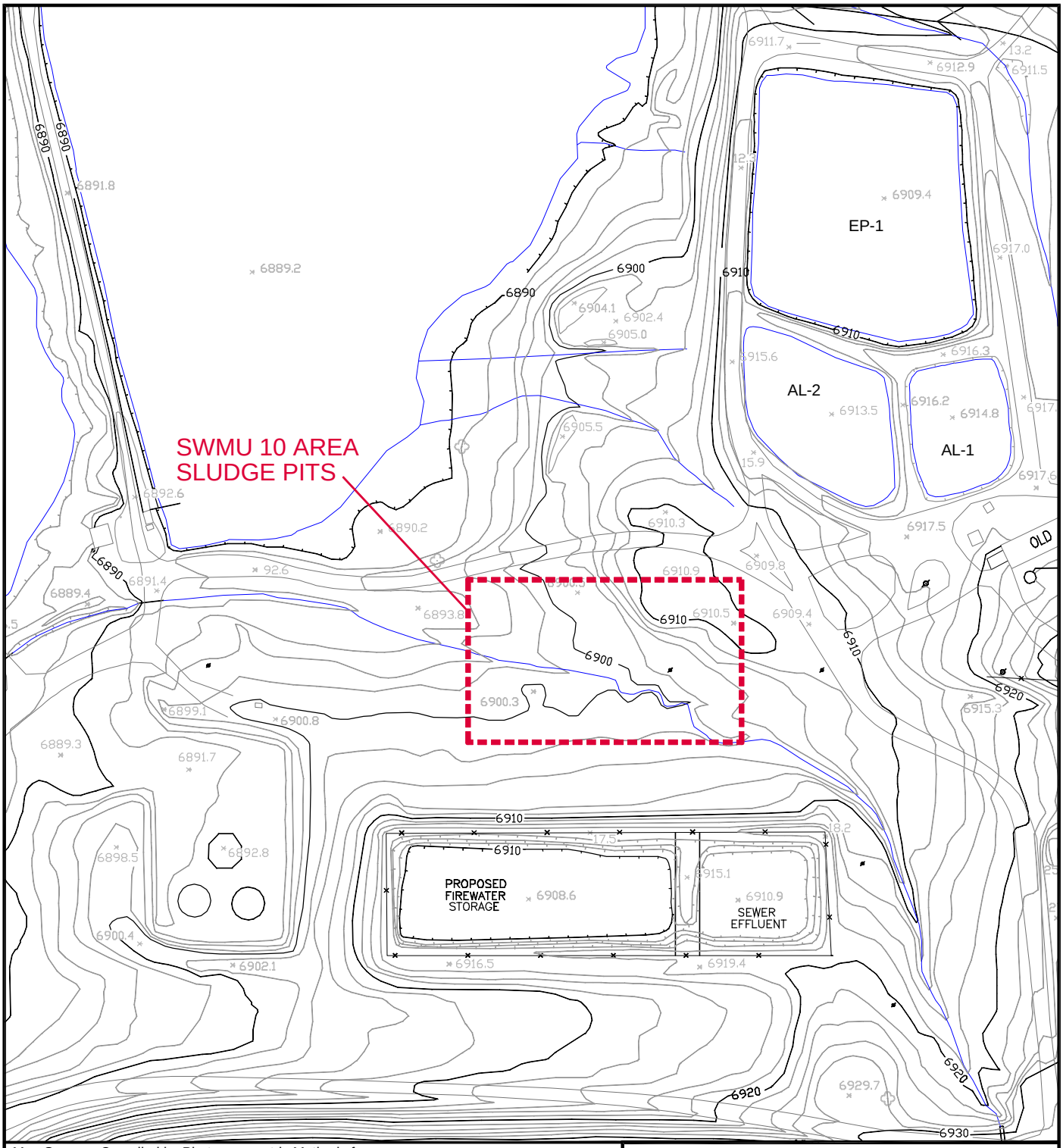

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

N

0 150

SCALE IN FEET

NEW MEXICO

QUADRANGLE LOCATION

Western Refining

GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:02/17/16	FILE:WestRef-dA40

FIGURE 5
TOPOGRAPHIC MAP
GALLUP REFINERY

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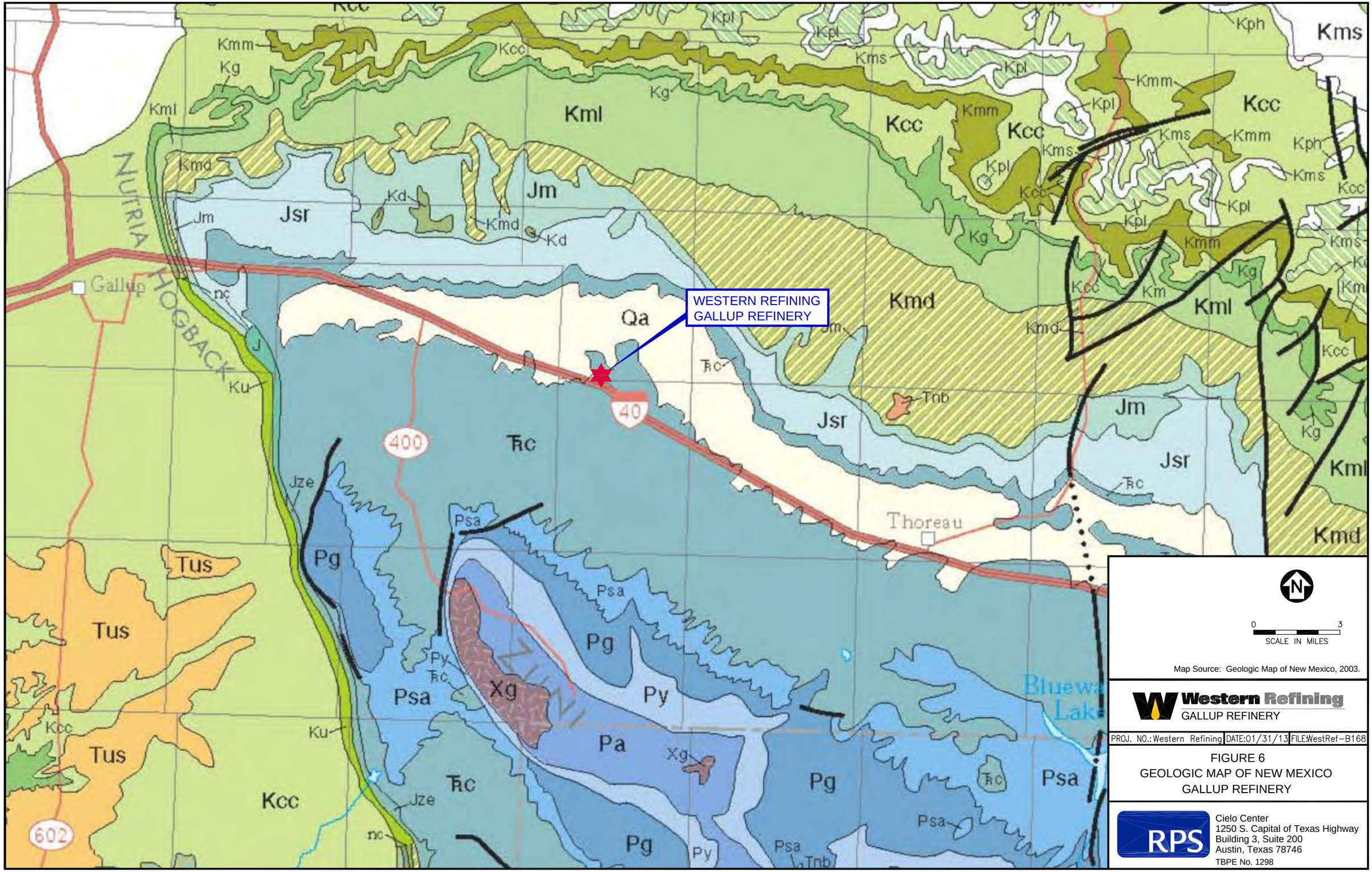
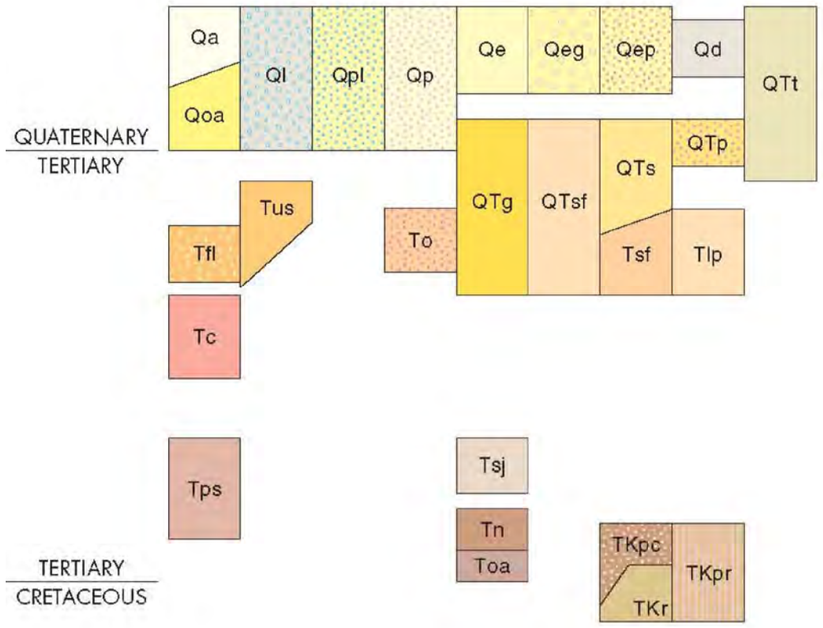
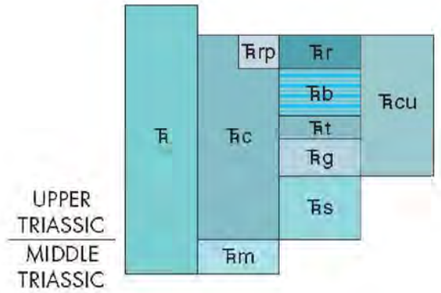
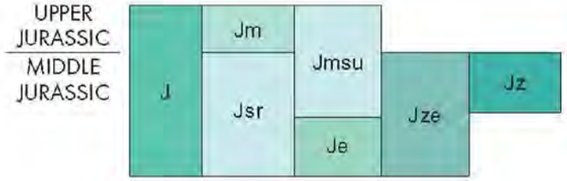

WESTERN REFINING
GALLUP REFINERY
NUTRIA
HOGBACK
ZUNI
Gallup
Thoreau
Bluewater Lake
Kml
Kmm
Kcc
Kpl
Kms
Kph
Kmd
Jm
Jsr
Kd
Kg
Qa
Trc
Tnb
Jze
Psa
Pg
Py
Xg
Pa
Tus
Ku
nc
J
40
400
602
0
3
SCALE IN MILES
Map Source: Geologic Map of New Mexico, 2003.
Western Refining
GALLUP REFINERY
PROJ. NO.: Western Refining
DATE:01/31/13
FILE:WestRef-B168
FIGURE 6
GEOLOGIC MAP OF NEW MEXICO
GALLUP REFINERY
RPS
Cielo Center
1250 S. Capital of Texas Highway
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298

Sedimentary







DESCRIPTION OF MAP UNITS

QUATERNARY

Qa Alluvium (Holocene to upper Pleistocene)

Ql Landslide deposits and colluvium (Holocene to Pleistocene)—Landslide deposits on western flanks of Socorro Mountains not shown for clarity

Qpl Lacustrine and playa deposits (Holocene)—Includes associated alluvial and eolian deposits of major lake basins

Qp Piedmont alluvial deposits (Holocene to lower Pleistocene)—Includes deposits of higher gradient tributaries bordering major stream valleys, alluvial veneers of the piedmont slope, and alluvial fans. May locally include uppermost Pliocene deposits

TRIASSIC

Chinle Formation of previous workers (e.g., Stewart et al., 1972) is used here as Chinle Group, following Lucas (1993)

Ŧr **Triassic rocks, undivided**—Continental red beds

Ŧrp **Rock Point Formation of Chinle Group** (Upper Triassic)—May locally include Wingate Sandstone (Triassic)

Ŧc **Chinle Group** (Upper Triassic)—Map unit includes Moenkopi Formation (Middle Triassic) at base in many areas; in eastern part of state the following five formations are mapped:

Ŧr **Redonda Formation** (Upper Triassic)

Ŧb **Bull Canyon Formation** (Norian)

Ŧt **Trujillo Formation** (Norian)

Ŧg **Garita Creek Formation** (Carnian)

Ŧs **Santa Rosa Formation** (Carnian)—Includes Moenkopi Formation (Middle Triassic) at base in most areas

Ŧcu **Upper Chinle Group, Garita Creek through Redonda Formations, undivided**

Ŧm **Moenkopi Formation** (Middle Triassic)

JURASSIC

To compare this map nomenclature to the USGS nomenclature, see the diagram included on this sheet (at right)

J **Upper and Middle Jurassic rocks, undivided.** In southwest includes the basalt-bearing Broken Jug Formation

Jm **Morrison Formation**—Upper Jurassic nonmarine rocks

Jmsu **Morrison Formation and upper San Rafael Group** (lowermost Cretaceous?-upper Jurassic)

Jz **Zuni Sandstone** (Callovian)—Consists of undivided equivalents of the Summerville Formation and Bluff Sandstone; restricted to Zuni Basin area

Jze **Zuni and Entrada Sandstones, undivided**

Je **Entrada Sandstone** (Middle Jurassic)

Jsr **San Rafael Group** (Middle Jurassic)—Consists of Entrada Sandstone, Todilto and Summerville Formations, Bluff Sandstone, and locally Zuni Sandstone (or only Acoma Tongue of Zuni)

Map Source: Geologic Map of New Mexico, 2003.

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-B168

FIGURE 6
GEOLOGIC MAP OF NEW MEXICO
GALLUP REFINERY

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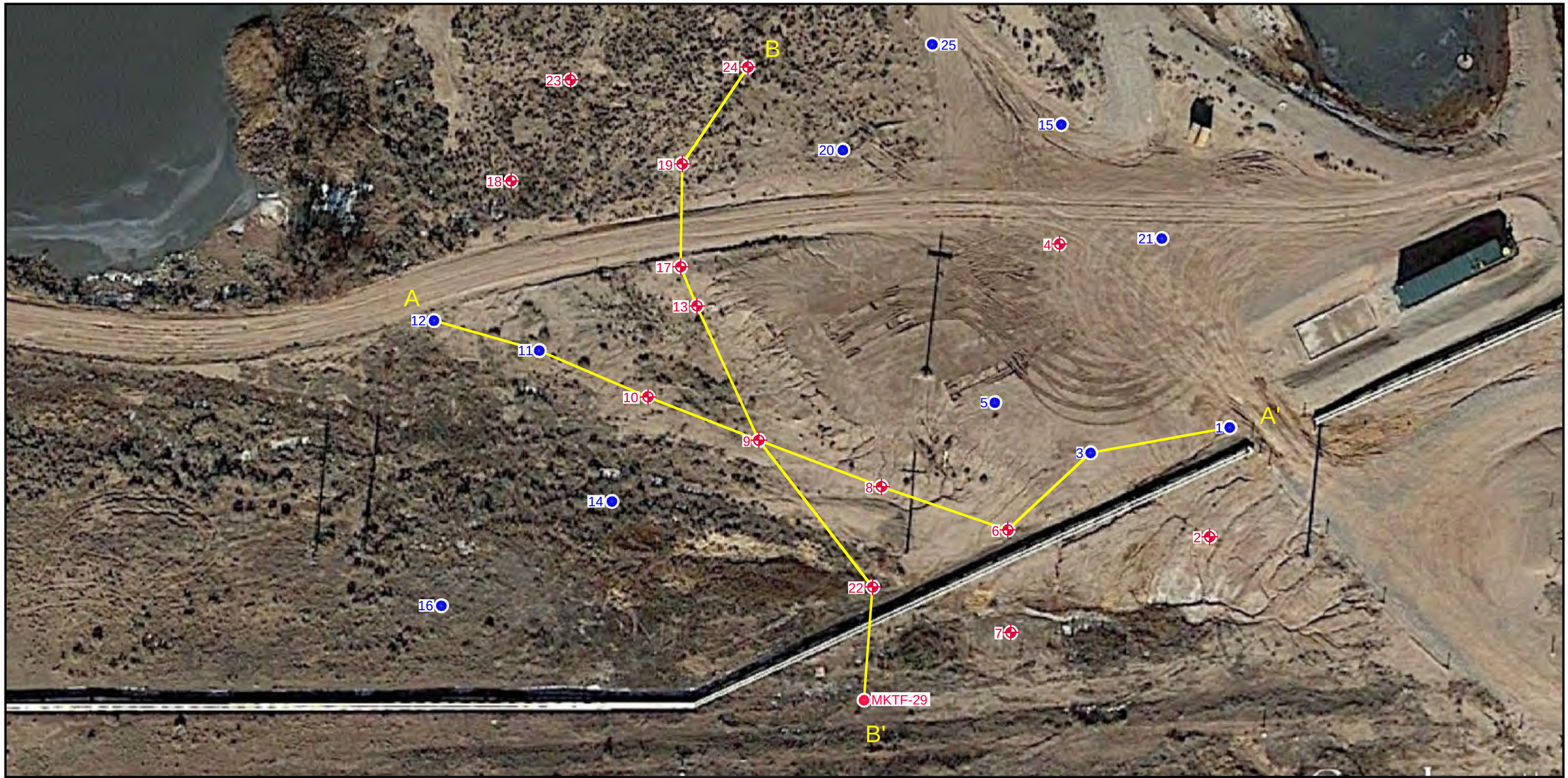
1250 S. Capital of Texas Highway
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298



Aerial Map Source: Google Map, 01/05/2014.

N

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
MKTF-29	MONITORING WELL LOCATION (PERMANENT WELL) AND IDENTIFICATION NUMBER
A——A'	LINE OF CROSS-SECTION

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:07/24/16 | FILE:WestRef-dB93

FIGURE 7
CROSS SECTION LOCATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

WEST
A

EAST
A'

ELEVATION (FT MSL)

6915
6910
6905
6900
6895
6890
6885
6880
6875
6870

SWMU10-12
SWMU10-11
SWMU10-10
SWMU10-9
SWMU10-8
SWMU10-6
SWMU10-3
SWMU10-1

CLAY, SILTY
SAND, CLAYEY
SILTY
GRAVELLY
CLAYSTONE
CLAY
SAND, CLAYEY
SANDY CLAY, CLAYEY SAND
CLAY, SANDY
GRAVELLY
CLAYSTONE
SAND, CLAYEY
CLAY, SANDY
CLAYSTONE
CLAY, SILTY
SANDY
CLAYSTONE
CLAY, SILTY, SANDY
CLAYSTONE, MUDSTONE
CLAY, SILTY
STIFF
CLAY, SILTY
SANDY
CLAYSTONE
SILTY, CLAY
SANDY
CLAYSTONE

EXPLANATION

SWMU10-1 — WELL IDENTIFICATION

WELL

SOIL SAMPLE INTERVAL

WELL SCREEN INTERVAL

LITHOLOGIC CONTACTS

DEPTH OF SATURATION

POTENTIOMETRIC SURFACE MEASURED 4-29-2015

5
0 25
SCALE IN FEET
VERTICAL EXAGGERATION = 5X

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:02/16/16 | FILE:WestRef-dB92

FIGURE 8
CROSS SECTION A-A'
WEST TO EAST
GALLUP REFINERY

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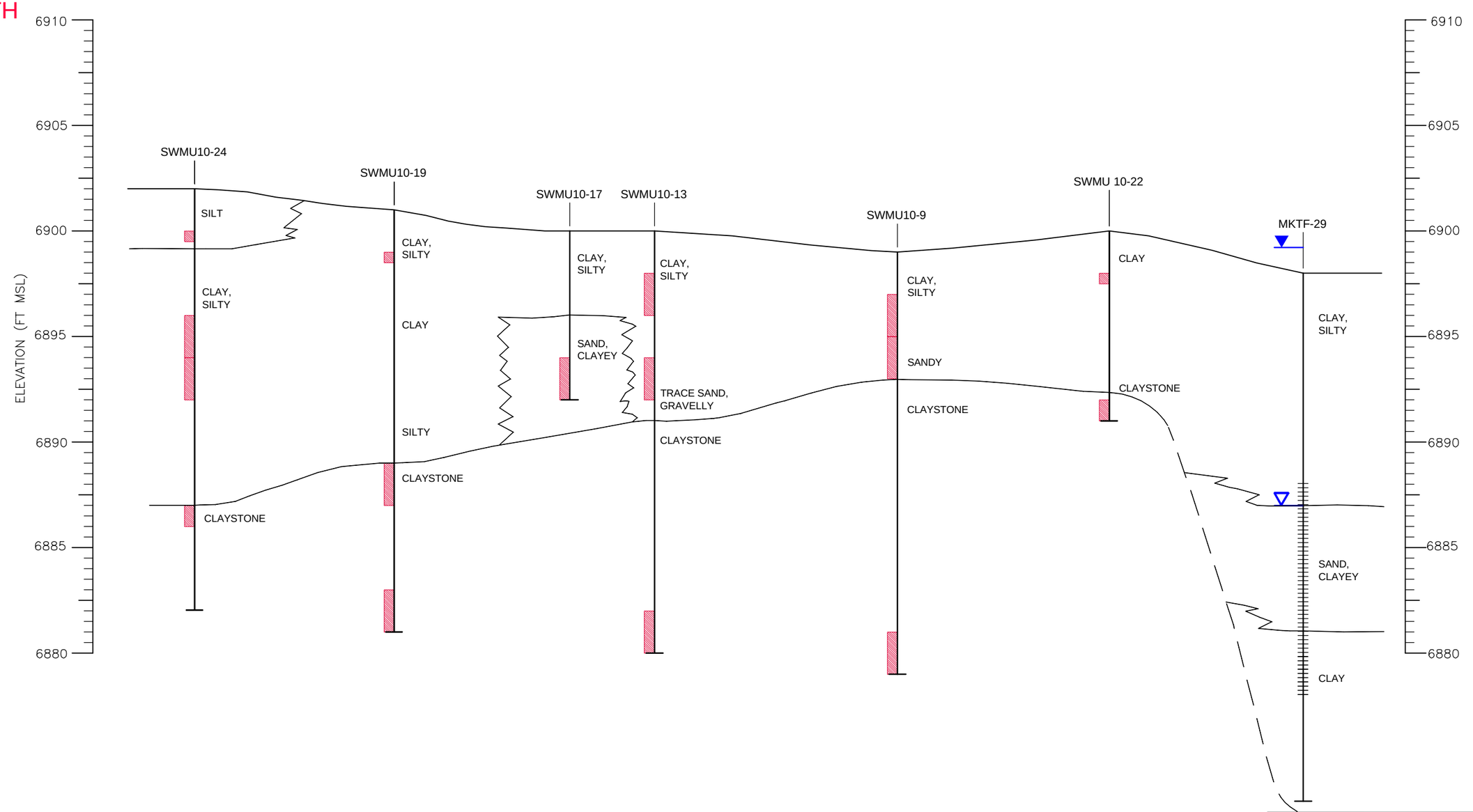
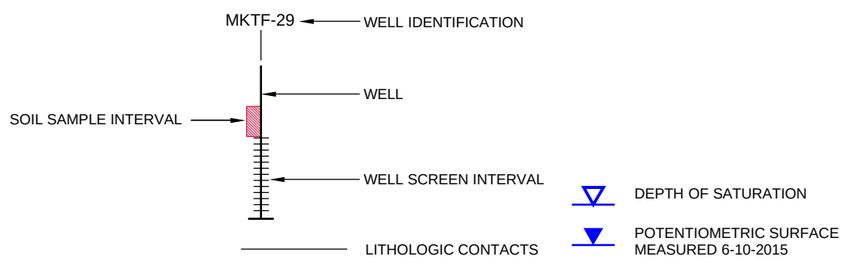
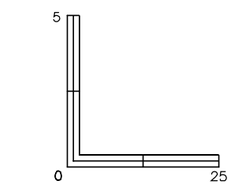
NORTH
B

SOUTH
B'



EXPLANATION





SCALE IN FEET
VERTICAL EXAGGERATION = 5X

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:02/16/16	FILE:WestRef-dB92

FIGURE 9
CROSS SECTION B-B'
NORTH TO SOUTH
GALLUP REFINERY

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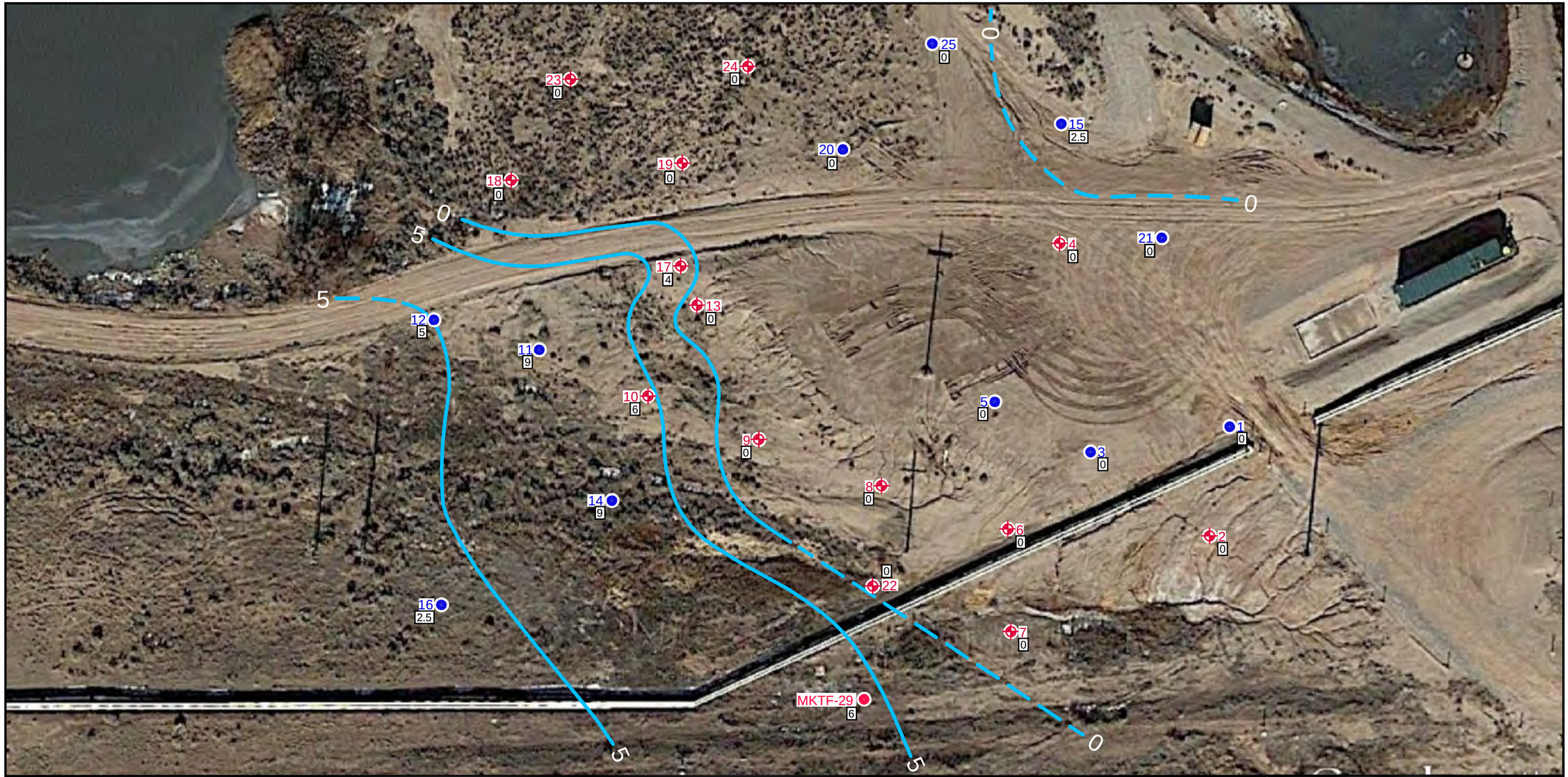

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
MKTF-29	MONITORING WELL LOCATION (PERMANENT WELL) AND IDENTIFICATION NUMBER
5	CONTOUR LINE OF SAND THICKNESS (FT)
2.5	SAND THICKNESS (FT)

N

0 40

SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:02/18/16 | FILE:WestRef-dB94

FIGURE 10

SAND ISOPACH MAP
SWMU No. 10

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Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
6880	CONTOUR LINE ESTIMATED ELEVATION ON TOP OF BEDROCK (ABOVE MSL)
6893	ESTIMATED ELEVATION ON TOP OF BEDROCK (ABOVE MSL)

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/18/16 | FILE: WestRef-dB95

FIGURE 11
ESTIMATED ELEVATION
ON TOP OF BEDROCK
SWMU No. 10

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Aerial Map Source: Google Map, 01/05/2014.

LEGEND

- 2 — SOIL BORING LOCATION AND IDENTIFICATION NUMBER
- 1 — SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
- MKTF-29 — MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
- 6900 — CONTOUR OF GROUNDWATER ELEVATION (FT MSL)
- 6905.34 — GROUNDWATER ELEVATION (FEET MSL)
- * — MEASURED NOVEMBER 2014
- GROUNDWATER FLOW DIRECTION

N

0 100
SCALE IN FEET

NEW MEXICO
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/18/16 | FILE: WestRef-dB96

FIGURE 12
POTENTIOMETRIC SURFACE MAP
MARCH 2015
SWMU No. 10

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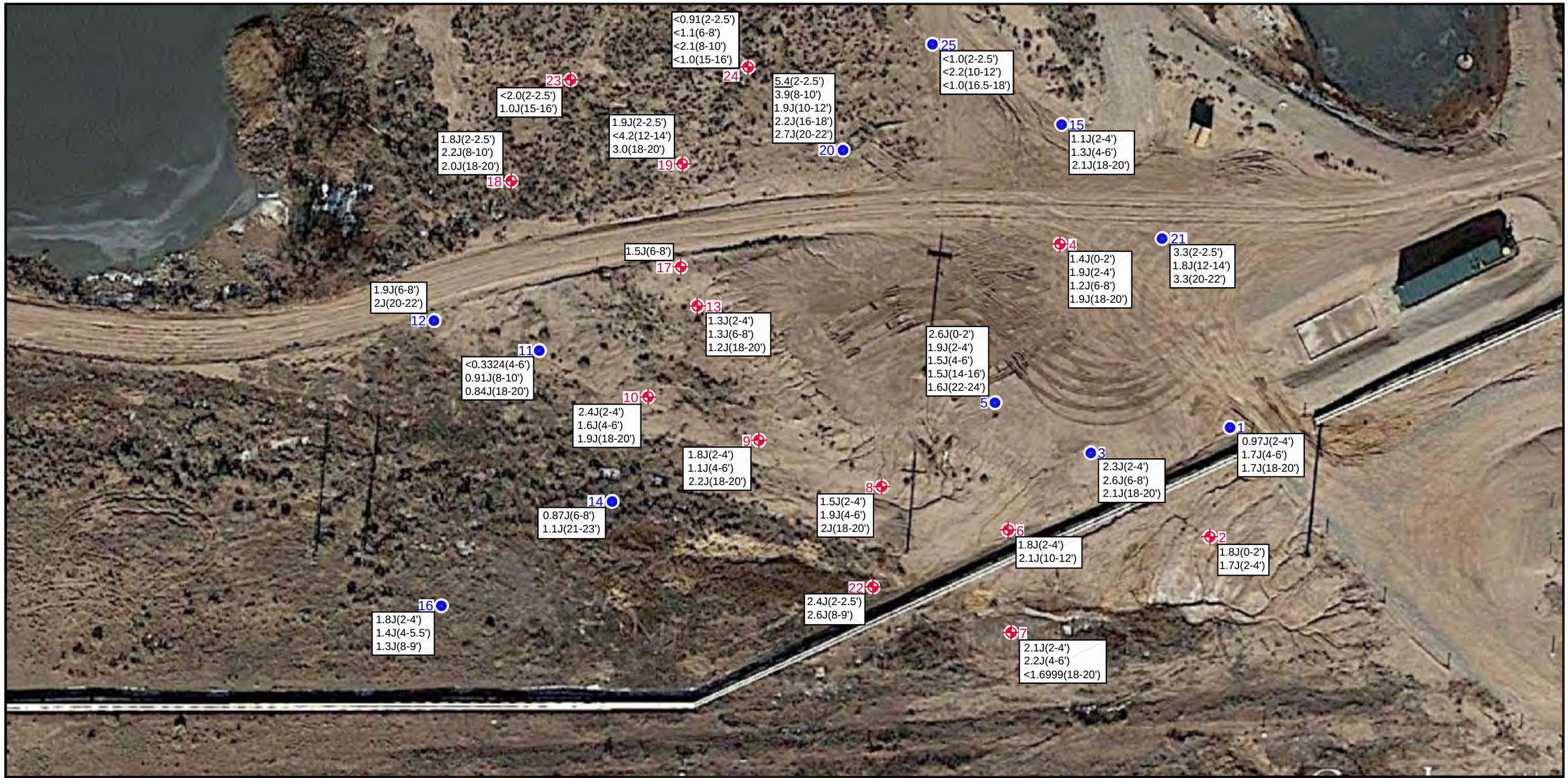

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 — SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 — SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

2.4J(0-2') — ARSENIC CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

4.25 — UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40

SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining

GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 07/23/16 | FILE: WestRef-dB75

FIGURE 13
ARSENIC
SOILS CONCENTRATION MAP
SWMU No. 10

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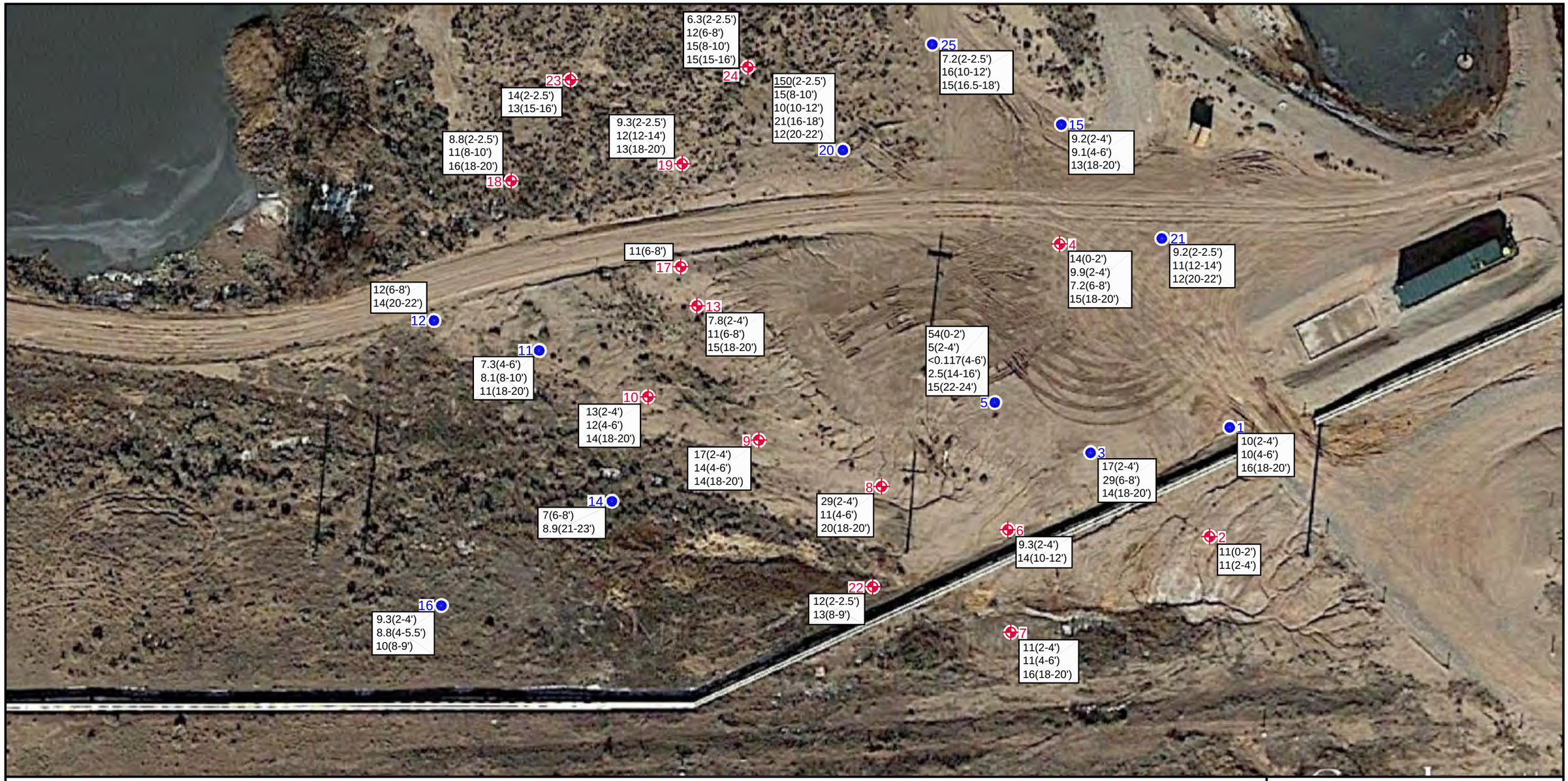

Aerial Map Source: Google Map, 01/05/2014.

N

0 40

SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
12(0-2')	CHROMIUM CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
96.6	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB185

FIGURE 14
CHROMIUM
SOILS CONCENTRATION MAP
SWMU No. 10

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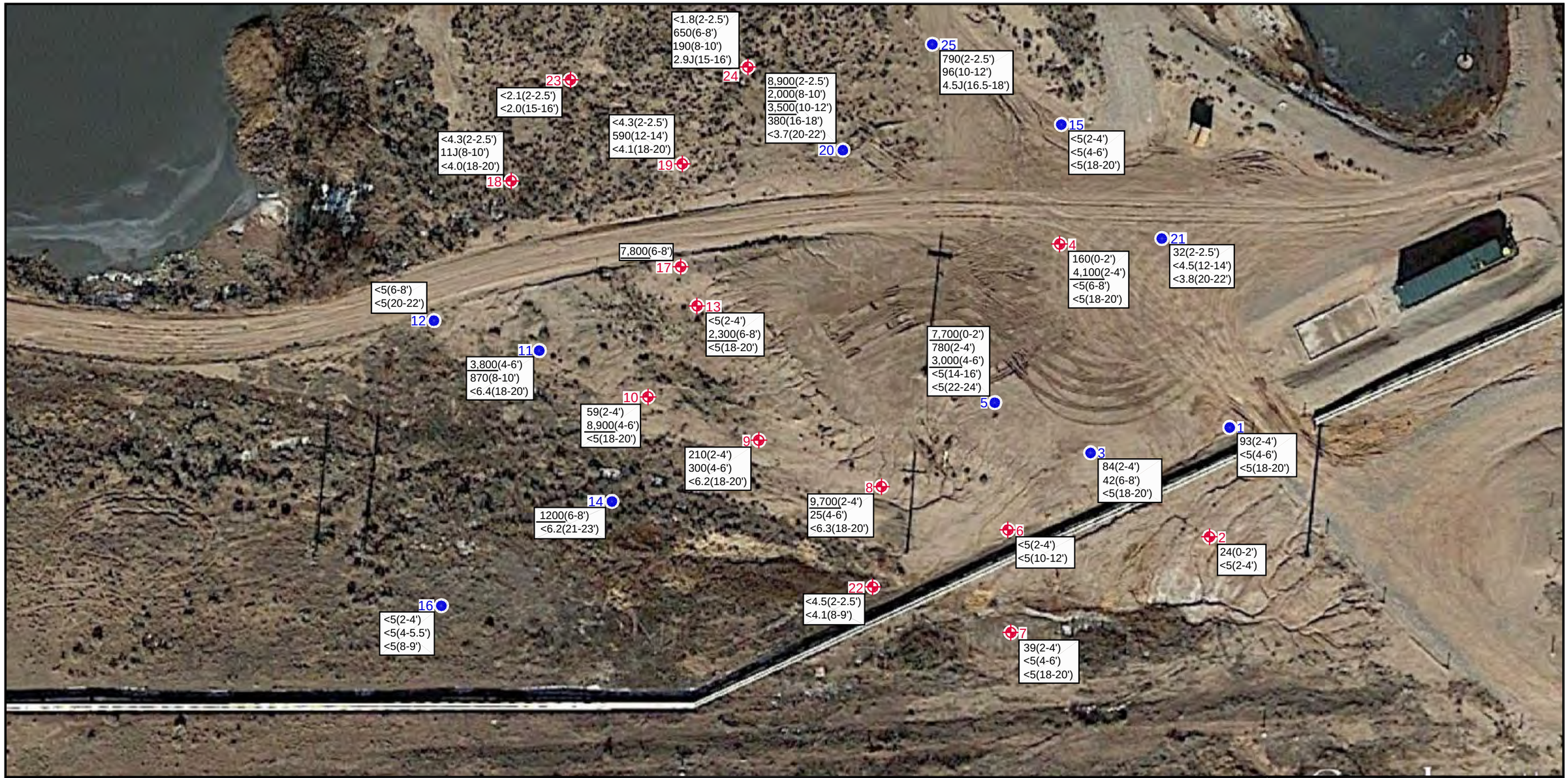

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
160(0-2')	DIESEL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
1,000	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/05/16 | FILE:WestRef-dB73

FIGURE 15
DIESEL RANGE ORGANICS
SOILS CONCENTRATION MAP
SWMU No. 10

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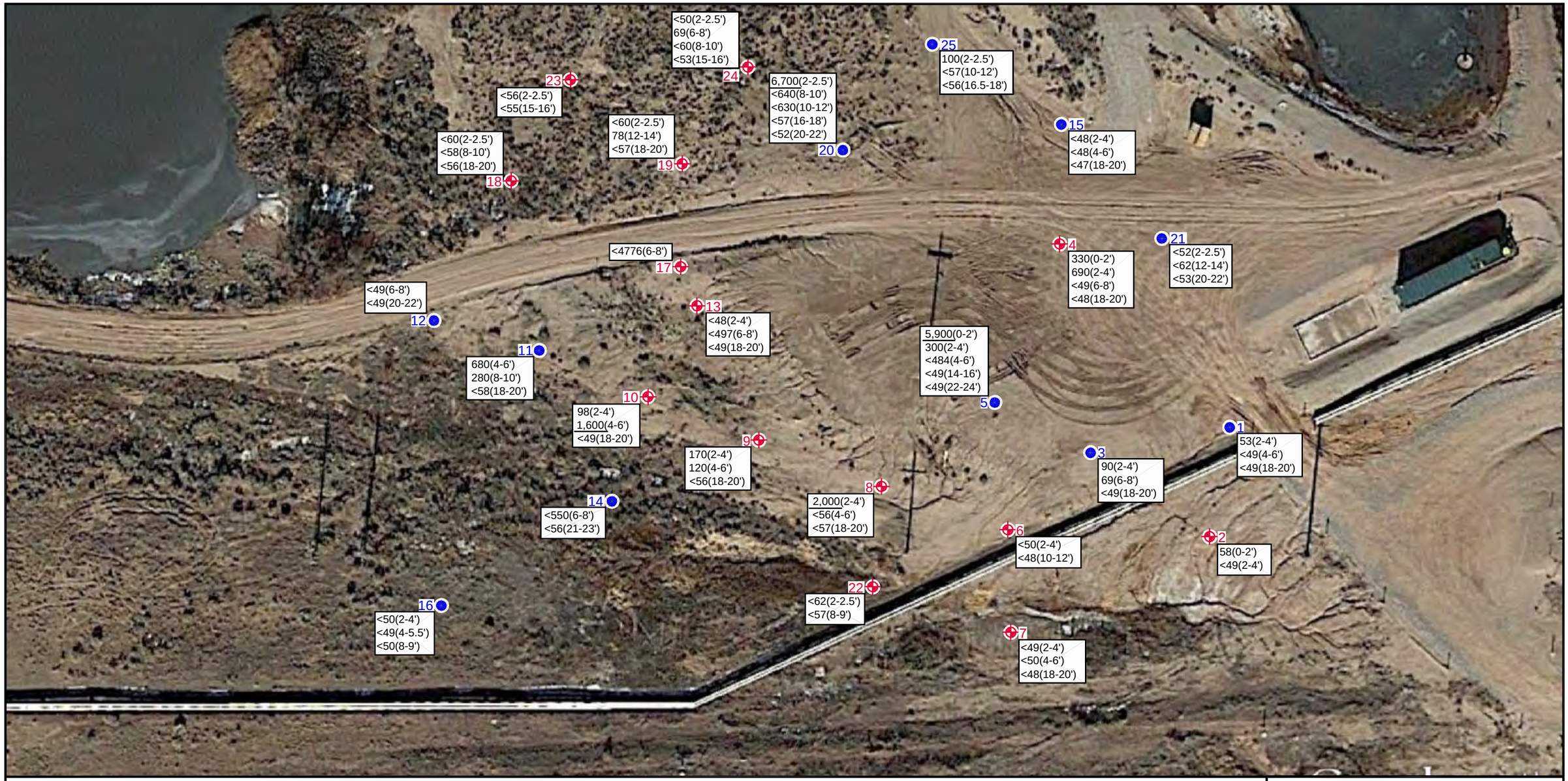
Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
330(0-2')	MOTOR OIL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
1,000	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/05/16 | FILE:WestRef-dB74

FIGURE 16
MOTOR OIL RANGE ORGANICS
SOILS CONCENTRATION MAP
SWMU No. 10

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Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.11 / 0.08	TOTAL ARSENIC CONCENTRATION, mg/l / DISSOLVED ARSENIC CONCENTRATION, mg/l
0.01	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

NEW MEXICO
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB186

FIGURE 17
ARSENIC
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.57 / 0.32	TOTAL BARIUM CONCENTRATION, mg/l DISSOLVED BARIUM CONCENTRATION, mg/l
2.0 / 1.0	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB187

FIGURE 18
BARIUM
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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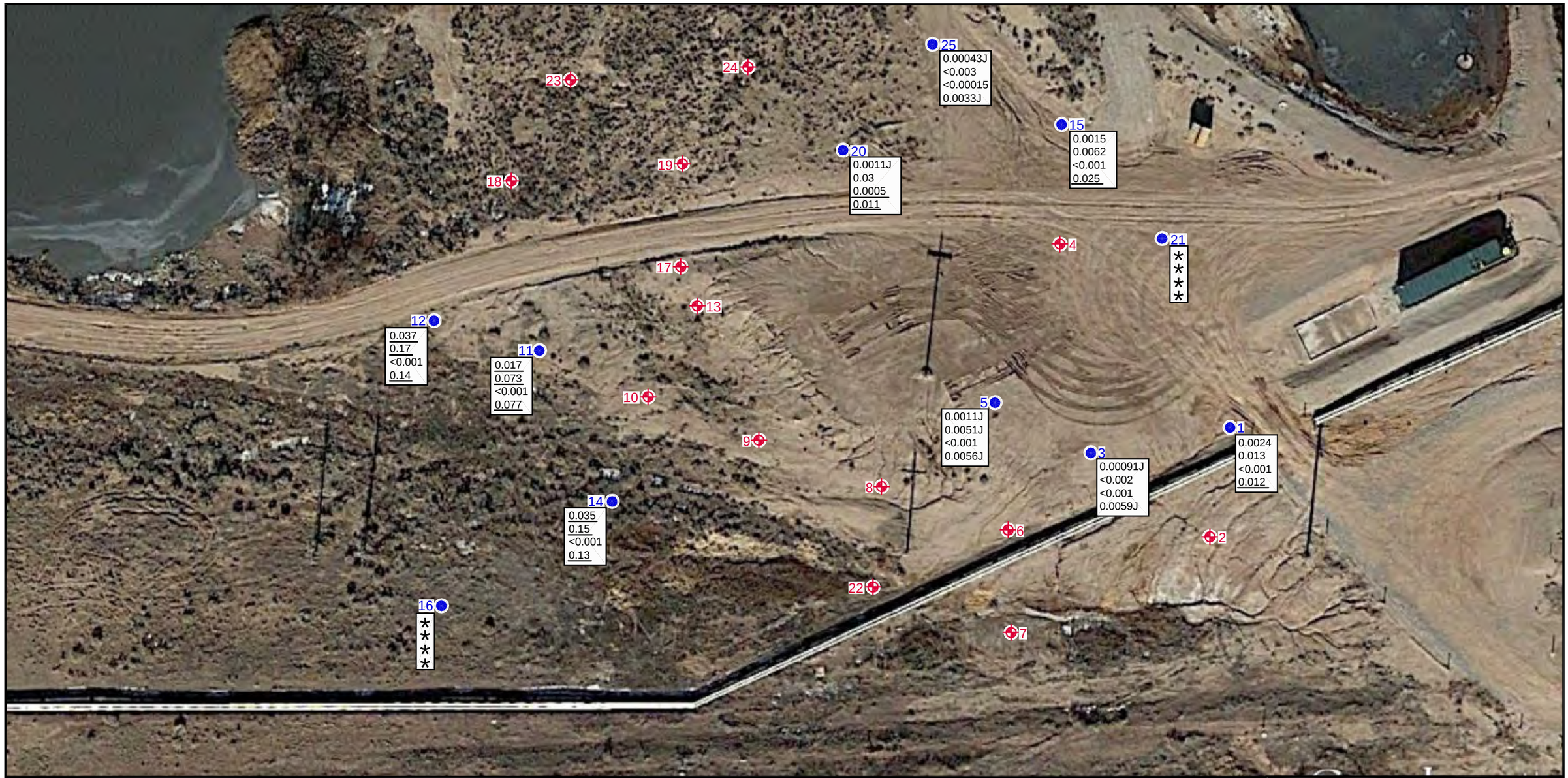

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2 — SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 — SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.0011J — TOTAL BERYLLIUM CONCENTRATION, mg/l
0.0051J — TOTAL CHROMIUM CONCENTRATION, mg/l
<0.001 — HEXAVALENT CHROMIUM CONCENTRATION, mg/l
0.0056J — TOTAL COBALT CONCENTRATION, mg/l

0.004 / 0.05 / 0.00025 / 0.006 — UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

* — NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

NEW MEXICO
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB188

FIGURE 19
BERYLLIUM, CHROMIUM, HEXAVALENT CHROMIUM AND COBALT GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
86 / 0.78	TOTAL IRON CONCENTRATION, mg/l; DISSOLVED IRON CONCENTRATION, mg/l
13.8 / 1.0	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB189

FIGURE 20
IRON
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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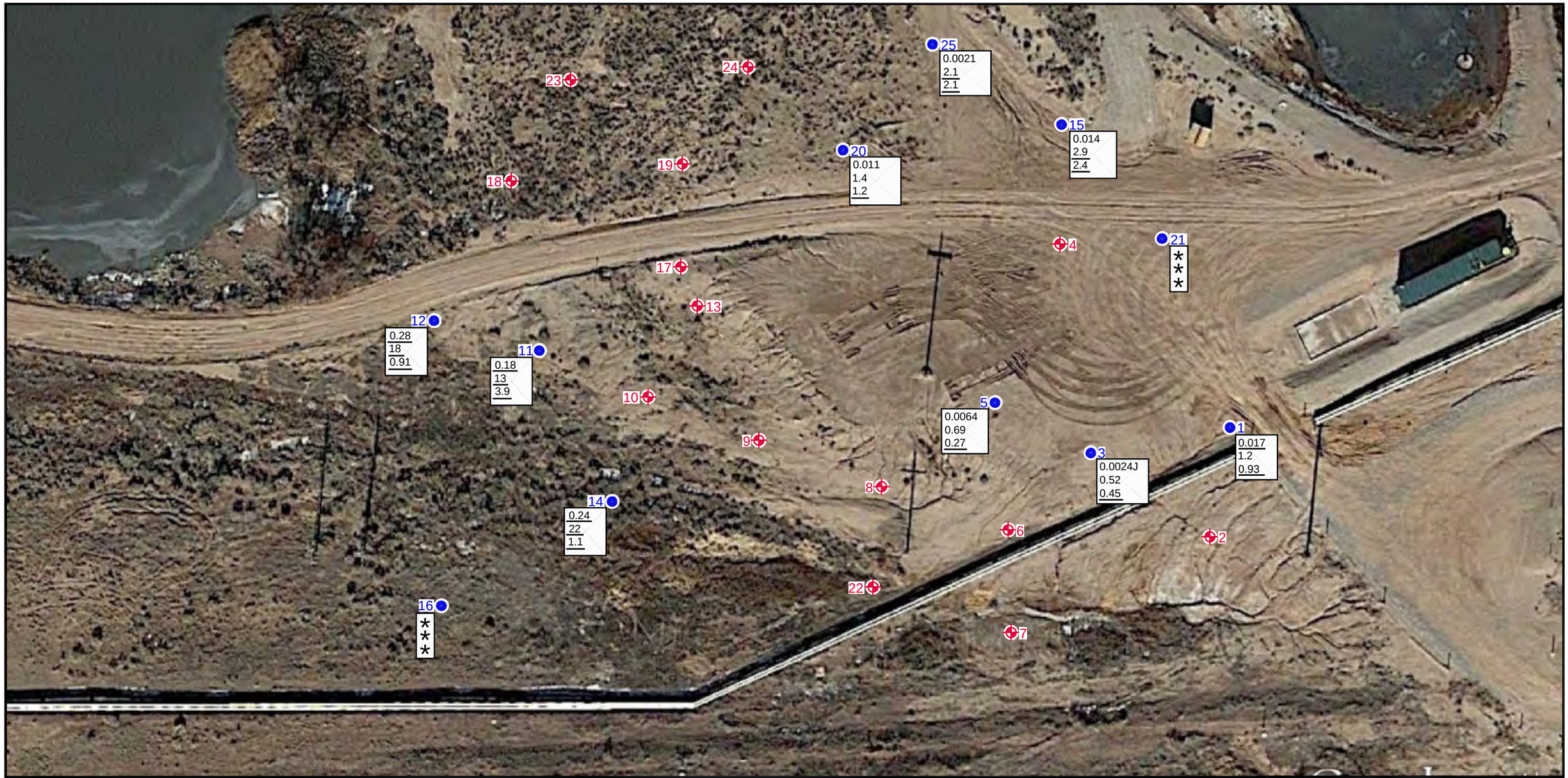

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.0064 0.69 0.27	TOTAL LEAD CONCENTRATION, mg/l TOTAL MANGANESE CONCENTRATION, mg/l DISSOLVED MANGANESE CONCENTRATION, mg/l
0.015 2.02 0.2	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

NEW MEXICO
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB190

FIGURE 21
LEAD AND MANGANESE GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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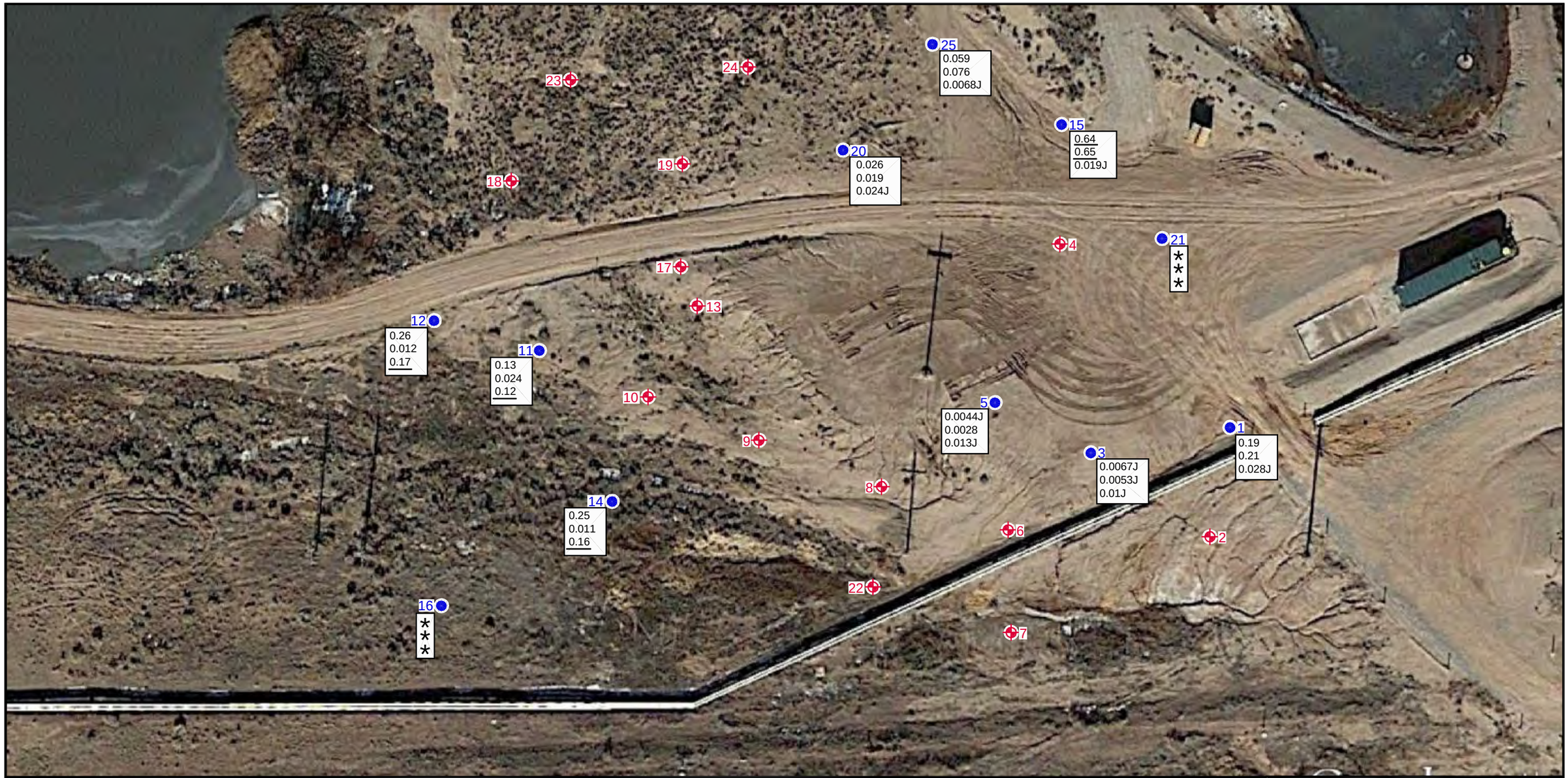

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.13 0.024 0.12	TOTAL NICKEL CONCENTRATION, mg/l DISSOLVED NICKEL CONCENTRATION, mg/l TOTAL VANADIUM CONCENTRATION, mg/l
0.372	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
0.372 0.0631	
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB191

FIGURE 22

NICKEL AND VANADIUM
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
330 370	CHLORIDE CONCENTRATION, mg/l SULFATE CONCENTRATION, mg/l
250	CHLORIDE - UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
600	SULFATE - UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 08/22/16 | FILE: WestRef-dB90

FIGURE 23
CHLORIDE & SULFATE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.44	1,2,4-TRIMETHYLBENZENE CONCENTRATION, µg/l
15.0	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/07/16 | FILE:WestRef-dB82

FIGURE 24
1,2,4-TRIMETHYLBENZENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
3.9	1,3,5-TRIMETHYLBENZENE CONCENTRATION, µg/l
12	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/07/16 | FILE:WestRef-dB83

FIGURE 25
1,3,5-TRIMETHYLBENZENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
3.1	1-METHYLNAPHTHALENE CONCENTRATION, µg/l
11	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/08/16 | FILE:WestRef-dB84

FIGURE 26
1-METHYLNAPHTHALENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
3.8	2-METHYLNAPHTHALENE CONCENTRATION, µg/l
36	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/08/16 | FILE:WestRef-dB85

FIGURE 27
2-METHYLNAPHTHALENE GROUNDWATER CONCENTRATION MAP SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2 ⊕	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1 ●	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
<1.854	2,4-DIMETHYLPHENOL CONCENTRATION, ug/l
35	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB193

FIGURE 28
2,4-DIMETHYLPHENOL
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
<1.246	2-METHYLPHENOL CONCENTRATION, ug/l
930	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB194

FIGURE 29
2-METHYLPHENOL
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
<1.475	3+4-METHYLPHENOL CONCENTRATION, ug/l
930	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB195

FIGURE 30
3+4-METHYLPHENOL
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

N

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
2.5	BENZENE CONCENTRATION, µg/l
5.0	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/08/16 | FILE:WestRef-dB86

FIGURE 31
BENZENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2 ⊕	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1 ●	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
<0.179	BROMODICHLOROMETHANE CONCENTRATION, ug/l
1.34	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB196

FIGURE 32

BROMODICHLOROMETHANE GROUNDWATER CONCENTRATION MAP SWMU No. 10

DiSorbo Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 03/18/2016.

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
16	MTBE CONCENTRATION, µg/l
143	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB192

FIGURE 33
MTBE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

N

0 40

SCALE IN FEET

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

45 NAPHTHALENE CONCENTRATION, µg/l

1.65 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/08/16 | FILE:WestRef-dB88

FIGURE 34
NAPHTHALENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2 ⊕	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1 ●	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
<2.171	PHENOL CONCENTRATION, ug/l
5,760	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB197

FIGURE 35
PHENOL
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 ⊕	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1 ●	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
140	TOLUENE CONCENTRATION, ug/l
750	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB198

FIGURE 36
TOLUENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2 ⊕	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1 ●	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
230	XYLENES CONCENTRATION, ug/l
620	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/06/18 | FILE:WestRef-dB199

FIGURE 37
XYLENES
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Appendix A
Waste Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NMD001033321

2. Page 1 of: 1 of 2

3. Emergency Response Phone: 800-424-9300

4. Manifest Tracking Number: 006757010 FLE

GENERATOR

5. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
I-40 exit 39 Route 3 Box 7
Jamestown, NM 87347
Generator's Phone: 800-424-9300

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Chemical Transport Inc. (SV)
U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107
Facility's Phone: 505-349-5220
U.S. EPA ID Number: NMD002208627

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN3175, Waste Solids containing flammable liquid, n.o.s. (benzene, xylene), 4.1 , PGII	1	DM	375	P	D001 D018 K050
X	2. RQ, UN1230, Waste Methanol, 3, PGII (D001)	1	TP	1,425	P	D001 U154
X	3. NA3082, Hazardous waste, liquid, n.o.s. (BENZENE,CHRYSENE), 9 , PGIII	3	DM	968	P	F037
X	4. NA1993, Combustible liquid, n.o.s. , Comb liq , PGIII (DIESEL IN VIALS)	1	DM	150	P	D001

14. Special Handling Instructions and Additional Information
Project Number 74076 Document #: D85375 24 hour emergency contact: CHEMTREC 800-424-9300
1)ERG#133; ACT17857 WEA- 3)ERG#171; RC5666 WEA-
2)ERG#131; ACT41300 WEA- 4)ERG#128; ACT3485 WEA-

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ALVIN Dorsey
Signature
Month 06 Day 16 Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kenny Sanchez
Signature
Month 06 Day 16 Year 15
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: NMD000333211

22. Page: 2 of 2

23. Manifest Tracking Number: 006757010FLE

24. Generator's Name
WESTERN REFINING SOUTHWEST GALLUP REFINING
I-40 exit 39 Route 3 Box 7
Jamestown, NM 87347

25. Transporter _____ Company Name — U.S. EPA ID Number

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes
	5) Non-RCRA/Non-DOT Regulated Material Liquid (ALUMINUM CHLORIDE HYDROXIDE SOLUTION)	A 15	TF DF	375	P	
	6) UN3082, Environmentally hazardous substances, liquid, n.o.s. (ETHANEDIOL), 9 , PGIII	D 5	DM		P	
	7) Non-DOT Regulated Material Solid (SANDBLASTING MEDIA)	1	DM	250	P	
	8) Non-DOT Regulated Material Solid (OIL, PPE, RAGS, DEBRIS)	1	DM	175	P	
	9) Non-RCRA/Non-DOT Regulated Material Solid (SOIL - DRILL CUTTINGS)	24	DM	1,385	P	

32. Special Handling Instructions and Additional Information
5) ERG#; ACT41298 WEA-_____ 6) ERG#171; ACT41296 WEA-_____ 7) ERG#; RC8257 WEA-_____ 8) ERG#; RC7334 WEA-_____ 9) ERG#; ACT14925 WEA-_____

TRANSPORTER

33. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

GENERATOR

DESIG

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NMD000333211	2	800-424-9300	009301751 FLE

5. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301
Generator's Phone: 505-722-0211

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Chemical Transport Inc. (SV) — U.S. EPA ID Number: CAR000070640

7. Transporter 2 Company Name — U.S. EPA ID Number

RECEIVED
SEP 12 2016

8. Designated Facility Name and Site Address
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107
Facility's Phone: 505-949-5220
U.S. EPA ID Number: NMD002208627

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1 NA3077, Hazardous waste, solid, n.o.s.(SOIL CONTAMINATED WITH HYDROCARBONS FROM API SEPERATOR), 9, PG III	01	DM	500	P	K051		
X	2 RQ, UN3175, Waste Solids containing flammable liquid, n.o.s. (acetone, methanol), 4.1, PGII	03	CF	375	P	D001	F003	F005
X	3 NA3082, Hazardous waste, liquid, n.o.s. (LEAD,ARSENIC), 9, PGIII	01	DM	250	P	D004	D008	D009
	4 Non-RCRA/Non-DOT Regulated Material Solid (SOIL - DRILL CUTTINGS)	(15)	DM	11,000	P	NONE		

14. Special Handling Instructions and Additional Information
Project Number 103463 Document #: D121904
1) ERG#171; ACT8736 WEA (01) 55 DM
2) ERG#133; ACT51807 WEA (03) CYB
3) ERG#171; ACT3416 WEA (01) 55 DM
4) ACT14026 WEA (15) 55 DM
24 hour emergency contact: CHEMTREC 800-424-9300

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ALVIS LOPEZ — Signature — Month 08 Day 31 Year 16

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Pharr — Signature — Month 08 Day 31 Year 16

Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Line 2 Actual weight 11340 LBS
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. H141 3. H141 4. H141

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Willis Swain — Signature — Month 08 Day 31 Year 16

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

Appendix B
Field Methods

Field Methods

Pursuant to the Investigation Work Plan for SWMU No. 10, an investigation of soils and groundwater was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil borings and temporary monitoring wells were installed at the Sludge Pits. The field methods are described below and individual discussions are presented for the following activities:

- Drilling procedures;
- Soil screening;
- Decontamination procedures;
- Monitoring well development;
- Fluid level measurements;
- Purging of temporary monitoring wells/groundwater sample collection;
- Sample collection and handling procedures;
- Vadose zone vapor sampling;
- Equipment calibration; and
- Management of investigation derived waste.

Drilling Procedures

The soil borings were drilled using the hollow-stem auger (HSA) method or a hand auger. Soil samples were collected continuously and logged by a qualified geologist in accordance with the Unified Soil Classification System (USCS) nomenclature. As shown on the boring logs, the data recorded included the lithologic interval, symbol, percent recovery, field screening results, and a sample description of the cuttings and core samples.

Soil Screening

Samples obtained from the borings were screened in the field on 2-foot intervals for evidence of contaminants. Field screening results were recorded on the soil boring logs. Field screening results were used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds.

Visual screening included examining the soil samples for evidence of staining caused by petroleum-related compounds or other substances that may have caused staining of soils such as elemental sulfur or cyanide compounds. Headspace vapor screening was conducted and involved placing a soil sample in a plastic sealable bag allowing space for ambient air. The bag was sealed, labeled and then shaken gently to expose the soil to the air trapped in the container. The sealed bag was allowed to rest for a minimum of 5 minutes while the vapors equilibrated. Vapors present within the sample bag's headspace were then measured by inserting the probe of a MiniRae 3000 portable volatile organic constituent (VOC) monitor in a small opening in the bag. The maximum value and the ambient air temperature were recorded on the field boring log for each sample. Field screening results and any conditions that were considered to be capable of influencing the results of the field screening were recorded on the field logs.

Decontamination Procedures

The drilling equipment (e.g., hollow-stem augers) was decontaminated between each borehole using a high pressure potable water wash. The sampling equipment coming in direct contact with the samples (e.g., hand augers and split-spoon samplers) were decontaminated using a brush, as necessary, to remove larger particulate matter followed by a rinse with potable water, wash with non-phosphate detergent, rinse with potable water, and double rinse with deionized water.

Fluid Level Measurements

The depth to separate phase hydrocarbon, if present, and groundwater was measured prior to purging the wells of potentially stagnant groundwater. A Geotech Interface Probe was used to measure fluid levels to 0.01 foot.

Temporary Monitoring Well Development/Purging

Using a new bailer attached to the end of the clean rope, approximately three volumes of groundwater were removed from the temporary wells. The groundwater and sediment removed from the wells were transported to the bundle cleaning pad in sealed 5-gallon buckets. Bailing ceased after a minimum of three well volumes were removed from the wells.

The purge volumes are calculated as follows:

Volume (gallons) = water column thickness (ft) x 3.14 x radius of well casing^2 (ft) x 7.48 (gals/ft).
The calculated purge volumes and actual volumes removed from each well are presented below.

Well (date)	Water Column Thickness (ft)	Calculated Purge Volume (gallons) – 3 well volumes	Actual Purge Volume (gallons)
SWMU 10-1	6.89	3.51	5.0
SWMU 10-3	3.2	1.63	2.0
SWMU 10-5	9.57	NA (1)	NA (1)
SWMU 10-11	10.22	5.22	5.25
SWMU 10-12	11.18	5.7	5.75
SWMU 10-14	8.5	4.35	5.0
SWMU 10-15	12.46	6.36	6.5
SWMU 10-16	2.78	NA (2)	NA (2)
SWMU 10-20	8.4	4.2	7.0
SWMU 10-21	0.43	0.2	NA (3)
SWMU 10-25	9.76	4.98	6.0

NA – not applicable
1 – Well SWMU 10-5 was not purged of three well volumes due to very slow recovery rate.
2 – Well SWMU 10-16 was not purged of three well volumes due to very low volume of water in well combined with slow recovery rate.
3- - Well SWMU 10-21 was not developed or purged due to very low volume of water accumulating in well; all available water used for sample analyses.

Field measurements of groundwater stabilization parameters included pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature and the readings are presented in Table 4. A disposable bailer was used to remove groundwater from the well during the purging procedures.

Sample Collection and Handling Procedures

Soil samples were collected using split-spoon samplers or directly from the auger bucket for borings completed with a hand auger. The selected portion of the sample interval was placed in pre-cleaned, laboratory-prepared sample containers for laboratory chemical analysis. Three soil samples were collected for VOC analysis in the following manner:

- Two sample aliquots were collected using a syringe for low-level VOC analysis pursuant to EPA method 5035. For these "Terracore" kits, 4- 5 grams (4cc) of soil was injected into each vial using the syringe. The syringes were disposed after soil collection.
- Two sample aliquots were collected using a syringe for preservation with methanol. For the methanol preserved kits, 10 grams (10 cc) of soil was injected into each methanol vial using the syringe. The syringes were disposed after soil collection.
- The third sample aliquot was placed in an 8-ounce glass jar, which was filled to the top to minimize any head space.

An additional fourth soil sample was collected in an 8-ounce glass jar for metals analyses.

Groundwater samples were collected using disposable bailers and clean rope. The water was immediately poured directly into clean laboratory supplied sample containers with the exception of samples collected for dissolved metals analyses. Samples specified for dissolved metals analyses were filtered in the field using a disposable 0.45 micron filter. A new filter and syringe were used for each sample. All samples were immediately placed into an ice chest with ice. The samples were maintained in the custody of the sampler until the chain-of-custody form was completed and the ice chest was sealed for delivery to the laboratory.

Equipment Calibration

Soil vapor screening was conducted using a MiniRae 3000 portable VOC monitor. The instrument was calibrated at the beginning of each work day to a concentration of 100 ppm isobutylene.

The instruments used to measure groundwater stabilization parameters included an YSI Professional Series Data Logger and YSI Quatro Sonde. The calibration solutions used at the beginning of each day are as follows:

- pH solution;
- 7.0 pH solution;
- 10.0 pH solution; and
- 1.413 mS/cm conductivity solution.

Management of Investigation Derived Waste

The drilling rig and drilling equipment were decontaminated on the bundle cleaning pad. The water is diverted to the Refinery's wastewater treatment system up-stream of the API Separator. The decontamination water generated from sampling equipment was collected in buckets and disposed at the bundle cleaning pad at the end of each day of sampling. All development/purge water was collected in five gallon buckets and disposed at the bundle cleaning pad.

Soil cuttings were placed into open top 55-gallon drums and were sealed when not in use. Each drum of soils was labeled and temporarily stored in a concrete curbed area pending waste characterization and disposal.

Appendix C

Boring Logs

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: 6' BGL
Start Date	: 04/28/2015
Finish Date	: 04/28/2015

WELL NO. SWMU 10-1

(Sheet 1 of 1)

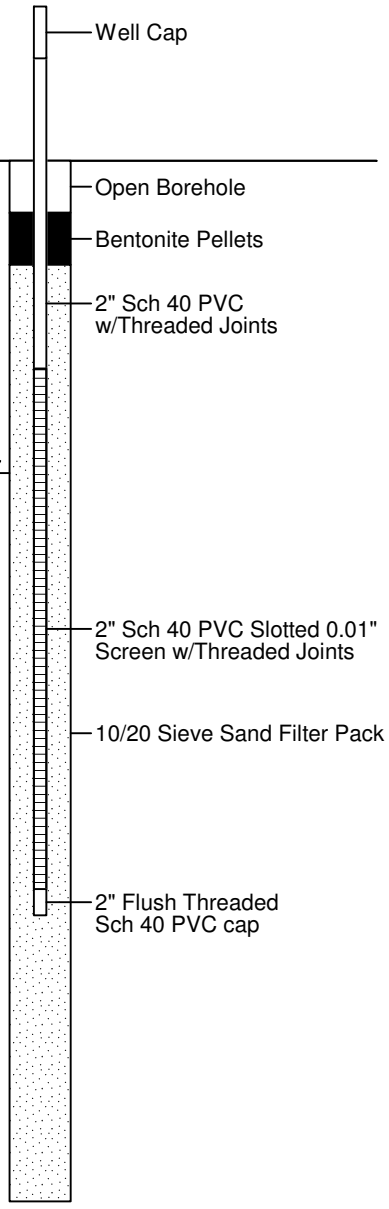
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.429'
E	: W 108° 25.817'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
1	14.8			CL	100		SILTY CLAY, low, firm, damp, reddish brown, no odor,
3	25.7			CL	50		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,
5	30.9			CL	80		SANDY CLAY, low, soft, damp to moist, reddish brown, no odor,
7	26.6			CL	90		SANDY CLAY, STA, very moist in sand seams, no odor,
9	20.7			CH	80		CLAY, high, firm, damp, reddish brown, no odor,
11	17.4			CH	90		CLAY, STA, stiff, no odor,
13	9.2			CH	90		CLAY, STA, water in sampling tube and on rods; clay is damp,
15	11.3			CLST/ MDST	50		CLAYSTONE/MUDSTONE, low, very stiff, hard, light reddish brown, dry, no odor,
17	5.3			CLST	60		CLAYSTONE, STA, no odor,
19	3.6			CLST	90		CLAYSTONE, STA, no odor.

Saturation
▼ Saturation

Completion Results

SWMU 10-1 (Temporary)



12-15-2015 C:\Users\cholmes\Documents\M-Tech\samples\WEST15005\SWMU 10\SWMU 10-1.bor

DiSorbo Consulting, LLC

1010 Travis Street
Houston, Texas 77002
713-955-1230

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: 3" Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 4'
Ground Water	: Not Encountered
Start Date	: 05/04/2015
Finish Date	: 05/04/2015

WELL NO. SWMU 10-2

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.422
E	: W 108° 25.818'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0	10.5			CL	100		SILTY CLAY, low to moderate, stiff, damp, brown, gravelly, no odor,
2	8.0			CH	100		CLAY, moderate to high, very stiff, damp, reddish brown, no odor.

-2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

12-15-2015 C:\Users\cholmes\Documents\M-Tech\samples\WEST15005\SWMU 10\SWMU 10-2.bor

1010 Travis Street
Houston, Texas 77002
713-955-1230

DiSorbo Consulting, LLC

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: 8' BGL
Start Date	: 04/28/2015
Finish Date	: 04/28/2015

WELL NO. SWMU 10-3

(Sheet 1 of 1)

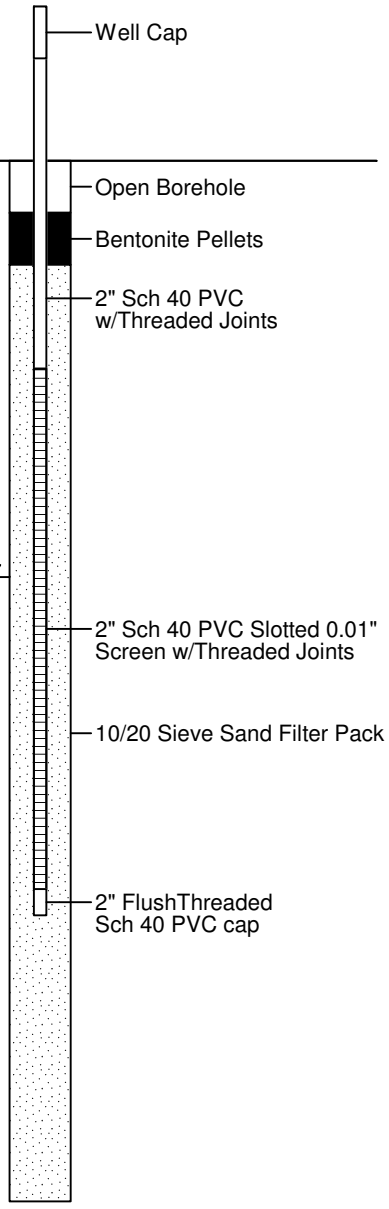
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.427'
E	: W 108° 25.828'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	USCS	Recovery (%)	DESCRIPTION
0–1	12.9	CL	100	SILTY CLAY, low, firm, damp, brown, no odor,
1–3	24.2	CL	50	SILTY CLAY, SIMILAR TO ABOVE (STA), slightly moist at base, no odor,
3–5	16.7	CL	70	SILTY CLAY, STA, trace sand in seams, no odor,
5–7	18.9	CL	60	SILTY CLAY, STA, soft, no odor,
7–9	17.6	CL	80	SANDY CLAY, low, soft, damp to very moist in sand seams, brown, no odor,
9–11	13.7	CL	90	SANDY CLAY, STA, no odor,
11–12		CL	90	SILTY CLAY, moderate, firm, damp, brown, no odor,
12–13	11.2	CH	90	CLAY, high, firm, damp, brown/reddish brown, no odor,
13–15	7.6	CLST/ MDST	60	CLAYSTONE/MUDSTONE, low, very stiff, hard, light reddish brown, dry, no odor,
15–17	7.2	CLST/ MDST	50	CLAYSTONE/MUDSTONE, STA,
17–19	2.5	CLST/ MDST	90	CLAYSTONE/MUDSTONE, STA.

Completion Results

SWMU 10-3 (Temporary)



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Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 04/29/2015
Finish Date	: 04/29/2015

WELL NO. SWMU 10-4

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.441'
E	: W 108° 25.831'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	40.5			CL	90		SILTY CLAY, low, very stiff, damp, brown, no odor,
2–3	335			CL	90		SILTY CLAY, low, firm to soft, damp, dark brown, becomes sandy at base with black staining, odor,
4–5	36.8			CL	90		SILTY SANDY CLAY, low, firm to soft, damp, reddish brown, faint odor,
6–7	42.7			CL	60		SILTY SANDY CLAY, SIMILAR TO ABOVE (STA), faint odor,
8–9	37.8			CH	100		CLAY, high, stiff, damp, reddish brown, sandy at base, faint odor,
10–11	25.6			CL	80		SANDY CLAY, low, soft, damp, very fine sand in seams, reddish brown, no odor,
12–13	31.1			CL	80		SILTY CLAY, low, firm, damp, reddish brown, trace sand, no odor,
14–15	32.9			CL	60		SILTY CLAY, low, firm, damp to dry, crumbly, dense at base, reddish brown trace grey, no odor,
16–17	14.1			CLST	70		CLAYSTONE, very stiff, dry, light reddish brown, no odor,
18–19	3.8			CLST	60		CLAYSTONE, SIMILAR TO ABOVE (STA).

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 24'
Ground Water	: Not Encountered
Start Date	: 04/29/2015
Finish Date	: 04/29/2015

WELL NO. SWMU 10-5

(Sheet 1 of 1)

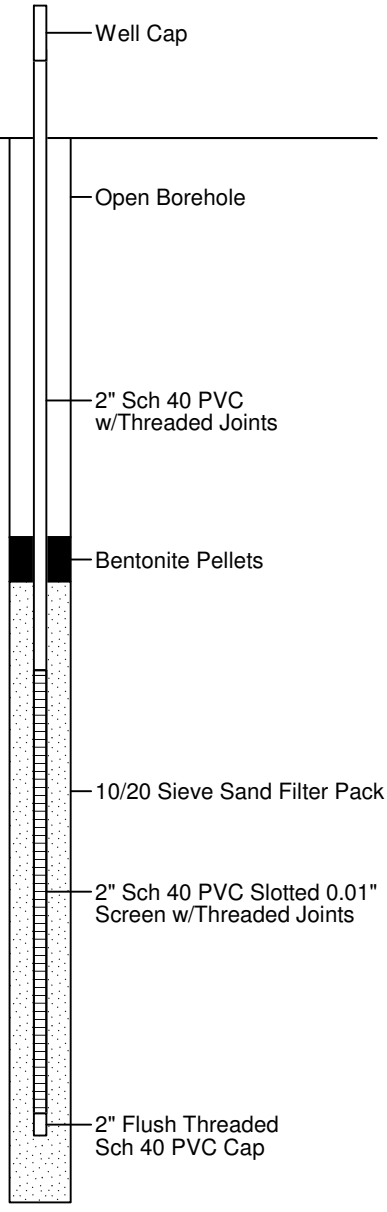
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.432'
E	: W 108° 25.837'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							
1	108			CL	90		SILTY CLAY, low, firm, damp, brown, black staining at base, odor,
2							
3	61			CL	60		CLAY, low, very soft, damp, wood debris, light greyish green, sticky, odor,
4							
5	445			CL	90		CLAY, SIMILAR TO ABOVE (STA), brownish green,odor,
6							
7	330			CL	50		CLAY, STA, odor,
8							
9	30.6			CL	90		CLAY, low, very soft, damp, light greyish green, sticky, odor,
10							
11	26.3			CL	90		CLAY, STA, moist, odor,
12							
13	3.5			CL	90		CLAY, STA, moist, reddish brown clay at 13.75-14' mixed with greyish green clay, odor,
14							
15	75.2			CL	40		CLAY, STA, greyish green and reddish brown clay, odor,
16							
17	9.4			CL	90		CLAY, STA,
18							
19	26.8			CL	90		CLAY, STA, greyish green clay only,
20							
21	16.5			CL	40		CLAY, STA, CLAYSTONE at base,
22							
23	10.7			CLST	70		CLAYSTONE, very stiff, dry, light reddish brown with grey seams.
24							
25							

Completion Results

SWMU 10-5 (Temporary)



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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: 3" Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 12'
Ground Water	: Not Encountered
Start Date	: 05/04/2015
Finish Date	: 05/04/2015

WELL NO. SWMU 10-6

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.422'
E	: W 108° 25.834'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	2.7			CL	100		SILTY CLAY, low to moderate, firm, damp, reddish brown, no odor,
1–2							
2–3	4.3			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,
3–4							
4–5	4.7			CL	100		SILTY CLAY, STA, no odor,
5–6							
6–7	2.9			CL	100		SILTY CLAY, STA, no odor,
7–8							
8–9	3.2			CH	100		CLAY, high, very stiff, damp, reddish brown, no odor,
9–10							
10–11	4.1			CL	100		CLAY, low, stiff, dry, light reddish brown, refusal, no odor.
11–12							

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 05/01/2015
Finish Date	: 05/01/2015

WELL NO. SWMU 10-7

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.412'
E	: W 108° 25.833'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	6.2			CL	90		SILTY CLAY, low, firm, damp, brown, no odor,
2–3	9.5			CL	90		SILTY CLAY, SIMILAR TO ABOVE (STA), trace black staining at base, no odor,
4–5	10.6			CH	90		CLAY, high, stiff to firm, damp, reddish brown, no odor,
6–7	9.7			CH	50		CLAY, STA, no odor,
8–9	9.1			CLST	60		CLAYSTONE, very stiff, dry, light reddish brown, no odor,
10–11	4.2			CLST	60		CLAYSTONE, STA, no odor,
12–13	8.1			CLST	60		CLAYSTONE, STA, no odor,
14–15	8.9			CLST	60		CLAYSTONE, STA, no odor,
16–17	8.2			CLST	50		CLAYSTONE, STA, no odor,
18–19	2.7			CLST	90		CLAYSTONE, STA, no odor.

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: Not Encountered
Start Date	: 04/30/2015
Finish Date	: 04/30/2015

WELL NO. SWMU 10-8

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.427'
E	: W 108° 25.846'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	12.9			CL	50		SILTY CLAY, low, firm, damp, brown, no odor,
2–3	1489			CL	60		SILTY SANDY CLAY, SIMILAR TO ABOVE (STA), sandy, hydrocarbon (hc) odor and staining at base,
4–5	400			CL	60		SILTY SANDY CLAY, STA, odor,
6–7	-				-		No Recovery,
8–9	22.9			CLST/ MDST	80		CLAYSTONE/MUDSTONE, very stiff, dry, light reddish brown and grey, no odor,
10–11	22.8			CLST	60		CLAYSTONE, STA, no odor,
12–13	24.6			CLST	60		CLAYSTONE, STA, no odor,
14–15	12.1			CLST	60		CLAYSTONE, STA, no odor,
16–17	10.2			CLST	70		CLAYSTONE, STA, no odor,
18–19	5.7			CLST	90		CLAYSTONE, STA, no odor.

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 04/30/2015
Finish Date	: 04/30/2015

WELL NO. SWMU 10-9

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.428'
E	: W 108° 25.855'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	18			CL	80		SILTY CLAY, low, firm, dry to damp, brown, no odor,
2–3	19.1			CL	60		SILTY CLAY, SIMILAR TO ABOVE (STA), damp, no odor,
4–5	380			CL	100		SANDY CLAY, low, soft, damp, dark reddish brown with black staining, claystone at base, hydrocarbon (hc) odor,
6–7	27			CLST	50		CLAYSTONE, very stiff, damp to dry, light reddish brown, odor,
8–9	28.9			CLST	60		CLAYSTONE, STA, trace grey, no odor,
10–11	10.7			CLST	70		CLAYSTONE, STA, no odor,
12–13	4			CLST	60		CLAYSTONE, STA, no odor,
14–15	8.9			CLST	60		CLAYSTONE, STA, no odor,
16–17	6.4			CLST	50		CLAYSTONE, STA, no odor,
18–19	6.2			CLST	80		CLAYSTONE, STA, no odor.

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 04/30/2015
Finish Date	: 04/30/2015

WELL NO. SWMU 10-10

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.431'
E	: W 108° 25.864'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	11.9			SC	90		CLAYEY SAND, compact to loose, dry to damp, brown, faint odor at base,
2–3	18.4			SC	90		CLAYEY SAND, SIMILAR TO ABOVE (STA), odor,
4–5	1685			SC	80		CLAYEY SAND, compact, damp, brown with black staining, hydrocarbon (hc) odor,
6–7	1514			CL	60		SANDY CLAY, low, soft, damp to moist, black, hc odor,
8–9	686			CL	90		SANDY CLAY, STA, black and dark reddish brown, hc odor,
10–11	655			CL	90		SILTY CLAY, STA, claystone at base, hc odor and hc stain,
12–13	75			CLST	40		CLAYSTONE, very stiff/dense, light reddish brown and grey, dry, faint odor,
14–15	18			CLST	50		CLAYSTONE, STA, no odor,
16–17	16.8			CLST	60		CLAYSTONE, STA, no odor,
18–19	8.5			CLST	90		CLAYSTONE, STA, no odor.

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: 4' BGL
Start Date	: 05/12/2015
Finish Date	: 05/12/2015

WELL NO. SWMU 10-11

(Sheet 1 of 1)

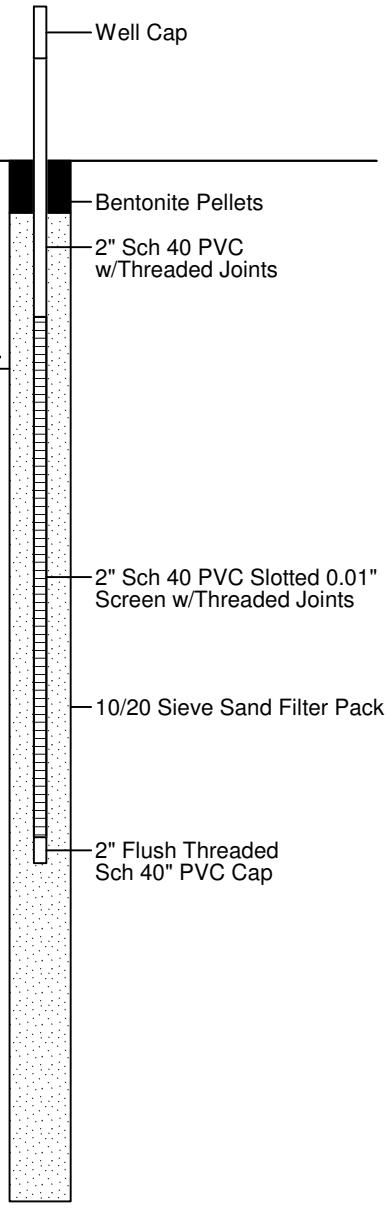
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.434'
E	: W 108° 25.873'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							SILTY CLAY, low, firm, damp, brown, no odor,
1	13.1			CL	80		
2							SILTY CLAY, SIMILAR TO ABOVE (STA),
3	4.0			CL	10		
4		▼					CLAYEY SAND, fine, compact, moist to saturated, black, odor,
5	524			SC	50		
6							CLAYEY SAND, STA, saturated,
7	133			SC	60		
8							CLAYEY SAND, STA, dark brown, black sludge lens at 9.75', saturated, odor,
9	570			SC	80		
10							CLAYEY SAND, STA, moist to saturated, odor,
11	8.5			SC	70		
12							CLAYEY SAND/SANDY CLAY, low, soft, damp to very moist, brown, odor,
13	69.2			SC/CL	70		
14							SANDY CLAY, low, firm, damp, reddish brown, gravel at base, faint odor,
15	20.6			CL	40		
16							SANDY GRAVELLY CLAY, stiff, damp, reddish brown, no odor,
17	7.2			CL	60		
18				CLST	60		CLAYSTONE, very stiff, damp to dry, reddish purple, no odor,
19	13.4			CLST	60		CLAYSTONE, STA, no odor.
20							
21							

Saturation
▼ Saturation

Completion Results

SMWU 10-11 (Temporary)



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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 22'
Ground Water	: 4'
Start Date	: 05/12/2015
Finish Date	: 05/12/2015

WELL NO. SWMU 10-12

(Sheet 1 of 1)

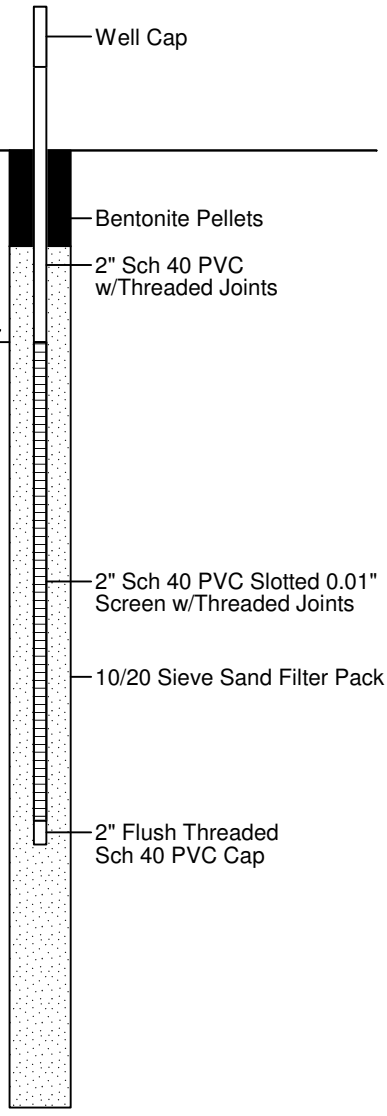
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.435'
E	: W 108° 25.883'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Lithology	USCS	Recovery (%)	DESCRIPTION
1	3.0		CL	90	SILTY CLAY, low, firm, damp, brown, no odor,
3	5.4		CL	5	SILTY CLAY, SIMILAR TO ABOVE (STA),
5	6.0		CL	90	SILTY CLAY, STA, trace sand, very moist, no odor,
7	4.5		CL	90	SILTY CLAY, STA, damp, occassional black staining, hard black rock asphalt at top, 20 mm,
9	6.1		CL	70	SILTY CLAY, low, soft, damp to moist in sand, occasional gravel, brown, no odor,
10	6.9		CL	70	SILTY CLAY, STA,
11	6.1		SC	70	CLAYEY SAND, fine, compact, saturated, brown, no odor,
13	4.9		SM	90	SILTY SAND, fine, loose, gravelly at 12.5' to 12.75' BGL, saturated, brown, no odor,
15	2.9		SM	90	SILTY SAND, STA,
17	1.8		CL	60	SANDY CLAY, low, firm, damp, brown, no odor,
19	1.2		CL	60	GRAVELLY CLAY, STA, 10 mm gravel, no odor,
21	1.5		CLST	80	CLAYSTONE, very stiff, damp to dry, reddish purple, grey and dark reddish brown, no odor.

Completion Results

SMWU 10-12 (Temporary)



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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: Not Encountered
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-13

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.437'
E	: W 108° 25.860'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							
1	4.4			CL	90		SILTY CLAY, low, firm, damp to dry, brown, no odor,
3	5.6			CL	80	X	SILTY CLAY, SIMILAR TO ABOVE (STA), very stiff, calcareous, no odor,
5	775			CL	50		SILTY CLAY, STA,
7	1055			CH	90	X	CLAY, high, firm, damp, dark brown, black staining, odor,
8	721			CH	70		GRAVELLY CLAY, STA with 10 mm gravel, trace sand, damp, dark brown, odor,
9				CLST	70		CLAYSTONE, very stiff, dry, reddish purple, faint odor,
11	11			CLST	50		CLAYSTONE, STA, brownish purple and grey, no odor,
13	10.3			CLST	50		CLAYSTONE, STA, reddish brown and grey, no odor,
15	10.4			CLST	70		CLAYSTONE, STA, no odor,
17	12.4			CLST	10		CLAYSTONE, STA, no odor,
19	14.1			CLST	80	X	CLAYSTONE, STA, no odor.

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Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 23' BGL
Ground Water	: 2' BGL
Start Date	: 05/12/2015
Finish Date	: 05/12/2015

WELL NO. SWMU 10-14

(Sheet 1 of 1)

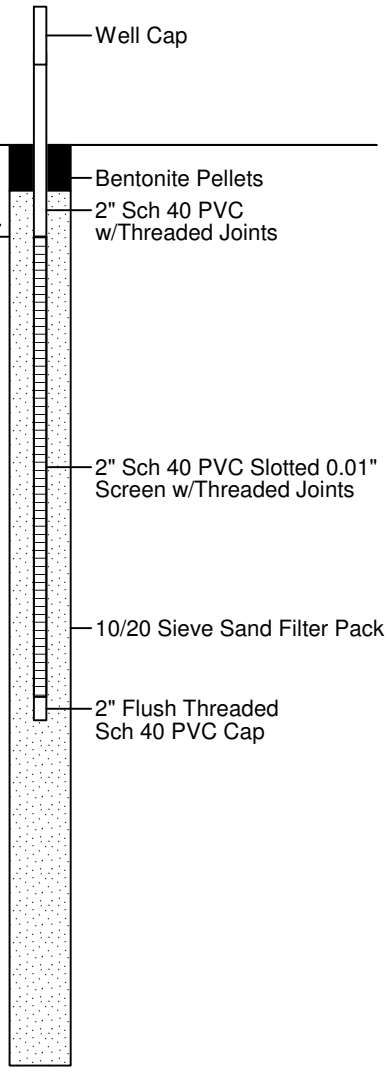
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.424'
E	: W 108° 25.867'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	3.2	▼		CL	60		SILTY CLAY, low, firm, dry to damp, brown, no odor,
2–3					-		No Recovery - Water on Spoon
4–5	10.1			GC	10		CLAYEY GRAVEL, loose, saturated, light tan, faint odor,
6				CH	50	X	CLAY, high, stiff, damp, dark brown, odor,
7–8	900			SC	50	X	CLAYEY SAND, fine, compact, saturated, dark brown, odor,
9	23.7			CL	60		SANDY CLAY, low, very soft, damp to moist, brown, odor,
10–11	15.9			SW	80		CLAYEY GRAVELLY SAND, fine to coarse, saturated, brown, no odor,
12–13	22.4			SW	80		CLAYEY GRAVELLY SAND, SIMILAR TO ABOVE (STA), saturated, no odor,
14–15	16.9			SW	70		CLAYEY GRAVELLY SAND, STA, saturated, increase in clay at base, decrease in moisture, no odor,
16–17	7.9			CL	20		GRAVELLY CLAY, low, very stiff, damp, 10 mm gravel, reddish brown and grey, no odor,
18	5.2			CL	50		GRAVELLY CLAY, STA, no odor,
19–20	6.1			CLST	50		CLAYSTONE, very stiff, dry, reddish brown and grey, no odor,
20–21				CLST	20		CLAYSTONE, STA, no odor,
21–22	1.8			CLST	50	X	CLAYSTONE, STA, no odor.

Saturation
▼ Saturation

Completion Results

SMWU 10-14 (Temporary)



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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: 7' BGL
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-15

(Sheet 1 of 1)

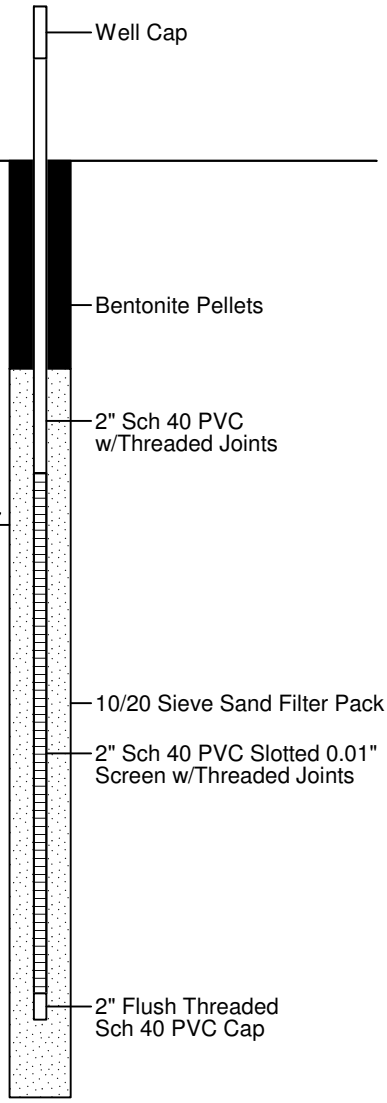
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.446'
E	: W 108° 25.287'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0				CL	90		SILTY CLAY, low, firm, dry to damp, brown, no odor,
1	11.4			CH	90		CLAY, high, soft, damp, sandy at base, brown, no odor,
2							
3	11.1			CL	90		SANDY CLAY, low to moderate, soft, damp, yellow brown to brown with black staining at 3.5' BGL, faint odor,
4				CL	90		SANDY CLAY, SIMILAR TO ABOVE (STA), faint odor,
5	13.9			CH	90		CLAY, high, soft, damp, brown, faint odor,
6				CL	90		SANDY CLAY, low, soft, damp, brown, no odor,
7	12.4	▼		CL	90		SANDY CLAY, STA, saturated sand seam at 7' , 3" thick, no odor,
8							
9	12.3			SC	90		CLAYEY SAND, loose, fine grain to small gravel, saturated, brown, no odor,
10				CH	90		CLAY, high, stiff, damp, brown, no odor,
11	10.7			CL	90		SILTY CLAY, moderate, firm, damp, brown, no odor,
12				CL	90		SANDY CLAY, STA, fine grain sand, moist to very moist at 11.75', no odor,
13	8.9			CL	90		SANDY CLAY, STA, saturated, brown, no odor.
14				SC	90		SILTY CLAY, low, firm, damp, brown, no odor,
15	8.4			CL	70		CLAYEY SAND, fine, loose, saturated, brown, no odor,
16				CL	90		SANDY CLAY, low, firm, damp, brown, no odor,
17	8.3						CLAY, low, stiff, damp, brown, no odor,
18				CLST	90		CLAYSTONE, very stiff, dry, reddish brown, no odor,
19	7.1			CLST	70		CLAYSTONE, STA, no odor.
20							
21							

Saturation
▼ Saturation

Completion Results

SWMU 10-15 (Temporary)



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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 9'
Ground Water	: 5.5'
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-16

(Sheet 1 of 1)

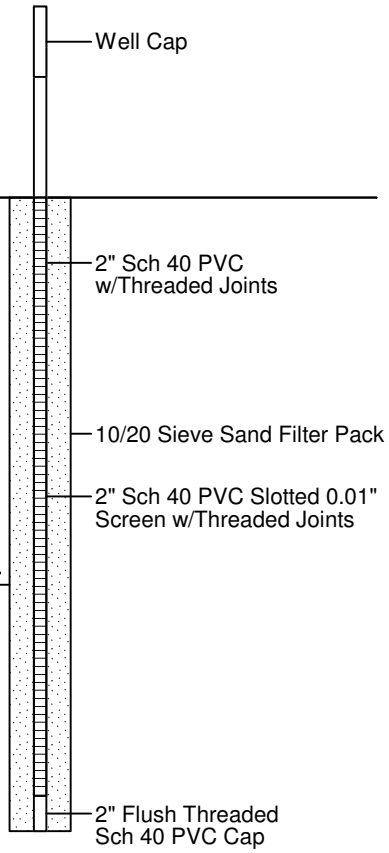
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.417'
E	: W 108° 25.881'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
1	10.4	▼		CL	100		SILTY CLAY, low, firm, damp, brown, no odor,
2							
3	4.9			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),
4							
5	4.4			CL	100		SILTY CLAY, STA,
				CL	100		SANDY CLAY, low, firm to soft, damp to moist to saturated at 5.5', brown, no odor,
6	8.4			SC	100		CLAYEY SAND, fine, loose, saturated, brown, no odor,
7	0.5			SC	100		CLAYEY SAND, STA, saturated,
8	6.8			CH	100		CLAY, high, stiff, damp, brown, no odor.

Saturation
▼ Saturation

Completion Results

SWMU 10-16 (Temporary)



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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 8'
Ground Water	: Not Encountered
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-17

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.437'
E	: W 108° 25.858'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
1	3.8			CL	100		SILTY CLAY, low, stiff, damp, brown, no odor,
3	4.1			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), sandy at base,
5	292			SC	100		CLAYEY SAND, fine, compact, damp, faint odor,
7	1667			SC	100		CLAYEY SAND, STA, moist at base, odor.

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME 75
Drilling Method	: Hollw Stem Auger
Sampling Method	: Split Spoon
Comments	: Hand Auger 0-5' BGL
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 05/16/2016
Finish Date	: 05/16/2016

BORING NO. SWMU 10-18

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.445'
E	: W 108° 25.875'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	6.6			CL	100		SILTY CLAY, low, firm, dry to damp, brown, no odor,
2–3	6.2			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),
4–5	8.9			CL	100		SILTY CLAY, STA,
6–7	18.4			CL	90		SILTY CLAY, STA,
8–9	20.6			CL	90		SILTY CLAY, STA, crumbly at base,
10–11	14.1			CLST	90		CLAYSTONE, very stiff, dry, reddish purple, no odor,
12–13	12.9			CLST	90		CLAYSTONE, STA, reddish purple and grey,
14–15	9.3			CLST	90		CLAYSTONE, STA,
16–17	10.1			CLST	75		CLAYSTONE, STA,
18–19	8.7			CLST	80		CLAYSTONE, STA.

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME 75
Drilling Method	: Hollow Stem Auger
Sampling Method	: Split Spoon - 2'
Comments	: Hand Auger 0-5' BGL
Total Depth	: 20'
Ground Water	: Not Enountered
Start Date	: 05/17/2016
Finish Date	: 05/17/2016

BORING NO. SWMU 10-19

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.446'
E	: W 108° 25.861'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	3.5			CL	100		SILTY CLAY, low, firm, dry to damp, brown, no odor,
2–3	1.5			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),
4–5	2.4			CL	100		SILTY CLAY, STA,
6–7	8.2			CH	70		CLAY, high, firm, damp, brown, no odor,
8–9	12.6			CH	70		CLAY, STA,
10–11	12.8			CL	90		SILTY CLAY, low, firm, crumbly, damp, reddish brown, no odor, moist, dense, grey clay at base,
12–13	900			CLST	90		CLAYSTONE, very stiff, dry, reddish brown and grey, chemical odor,
14–15	291			CLST	80		CLAYSTONE, STA, faint odor,
16–17	233			CLST	60		CLAYSTONE, STA, odor,
18–19	30.1			CLST	70		CLAYSTONE, STA.

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Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME 75
Drilling Method	: Hollow Stem Auger
Sampling Method	: Split Spoon - 2'
Comments	: Hand Auger 0-5' BGL
Total Depth	: 22'
Ground Water	: 12'
Start Date	: 05/17/2016
Finish Date	: 05/17/2016

BORING NO. SWMU 10-20

(Sheet 1 of 1)

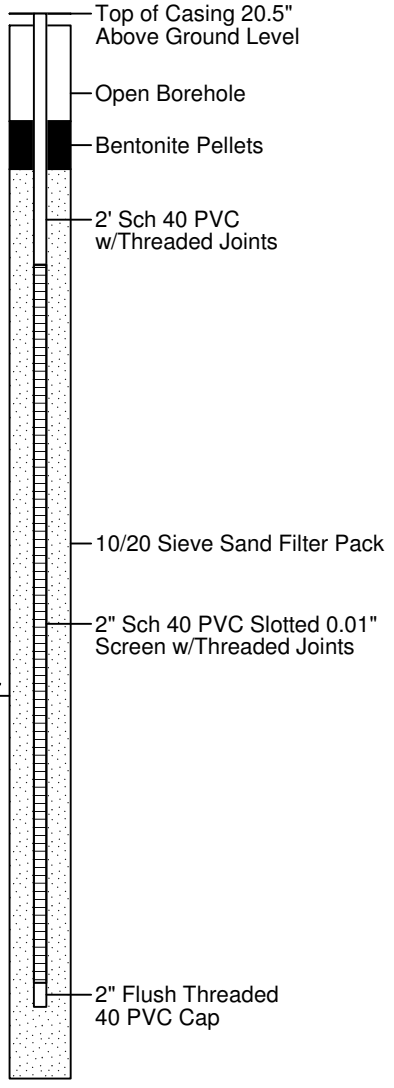
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.447'
E	: W 108° 25.849'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							
1	1.3			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,
2							
3	0.7			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),
4							
5	1.0			CL	100		SILTY CLAY, STA,
6							
7	1436			CL	100		SILTY CLAY, STA, odor,
8							
9	1603			CH	60		CLAY, high, firm, damp, brown, chemical odor, black staining at base,
10							
11	1715			CL	80		SILTY SANDY CLAY, moderate, firm, damp to moist, odor,
12							
13	376			CL	90		SILTY SANDY CLAY, STA, moist to saturated, odor,
14							
15	77			CL	90		SILTY SANDY CLAY, STA, moist to saturated in sand seam at 15.5' BGL, odor,
16							
17	1022			CL	90		SILTY SANDY CLAY, STA, moist to saturated, black staining, odor,
18							
19	72			CL	90		SILTY CLAY, low, soft, damp to moist, brown, odor, claystone at base,
20							
21	10.2			CLST	80		CLAYSTONE, very stiff, dry, reddish purple and grey, no odor.
22							
23							

Saturation
▼ Saturation

Temporary Well Settings

TEMP WELL SWMU 10-20



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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME 75
Drilling Method	: Hollow Stem Auger
Sampling Method	: Split Spoon
Comments	:
Total Depth	: 22'
Ground Water	: 14'
Start Date	: 05/18/2016
Finish Date	: 05/18/2016

BORING NO. SWMU 10-21

(Sheet 1 of 1)

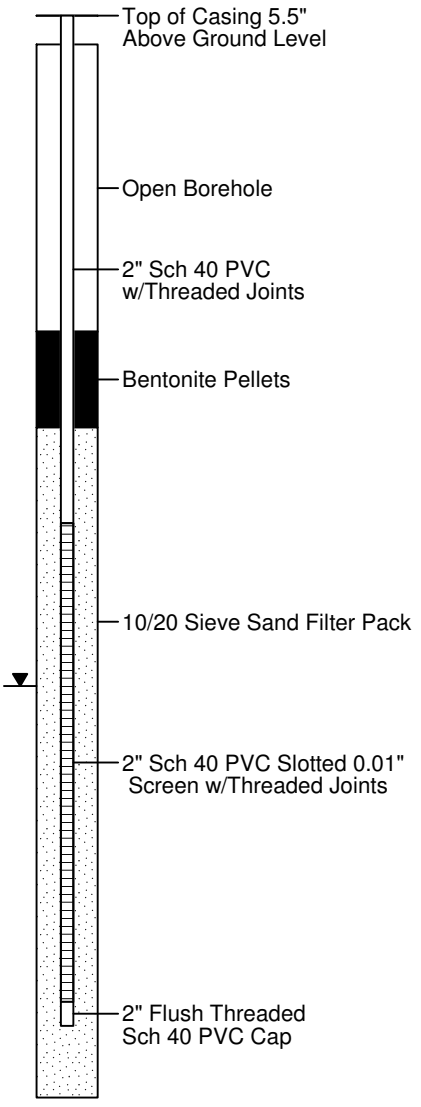
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.442'
E	: W 108°25.823'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	1.5			ML	100		SILT/GRAVEL, compact, damp, no odor,
1–3	17.0			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,
3–5	16.7			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,
5–7	7.2			CL	90		SANDY SILTY CLAY, low, soft, sand in seams, damp, brown, no odor,
7–9	9.6			CL	90		SANDY SILTY CLAY, STA, no odor,
9–11	5.3			CH	90		CLAY, high, soft, damp, brown, no odor,
11–13	12.1	▼		CH	90		CLAY, STA, sandy at base, no odor,
13–15				CL	60		SANDY SILTY CLAY, low, soft, moist to saturated in sand seams, brown, no odor,
15–17				CL	70		SANDY SILTY CLAY, STA, saturated in sand seams, no odor,
17–19	6.1			CL	70		SANDY SILTY CLAY, STA, damp, no odor,
19–21	2.7			CLST	70		CLAYSTONE, very stiff, dry, reddish purple and grey, no odor.

Saturation
▼ Saturation

Temporary Well Settings

TEMP WELL SWMU 10-21



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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	:
Drilling Method	: Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 9'
Ground Water	: Not Encountered
Start Date	: 05/18/2016
Finish Date	: 05/18/2016

BORING NO. SWMU 10-22

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.418'
E	: W 108° 25.846'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	5.6			CL	100		CLAY, moderate, firm, damp, brown, no odor,
1–2							
2–3	2.0			CL	100		CLAY, SIMILAR TO ABOVE (STA),
3–4							
4–5	4.1			CL	100		CLAY, STA,
5–6							
6–7	6.9			CL	100		CLAY, STA,
				CLST	100		CLAYSTONE, very stiff, dry, reddish purple, no odor,
7–8	7.2			CLST	100		CLAYSTONE, STA.
8–9							
9–10							

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME75
Drilling Method	: Hollow Stem Auger - 7.5"
Sampling Method	: 2' Split Spoon - 2" Diameter
Comments	: Hand Augered to 6' BGL;
Total Depth	: 17' Grouted Borehole 9/19/16
Ground Water	: Not Encountered
Start Date	: 9/19/2016
Finish Date	: 9/19/2016

BORING NO. SWMU 10-23

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.542'
E	: W 108° 25.869'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							
1	0.0			ML	100		SILT, low, soft, damp, brown, no odor,
2	0.2			ML	100	X	SILT, SIMILAR TO ABOVE (STA),
4	0.2			ML	100		SILT, STA,
6	2.0			CL	50		SILTY CLAY, low, firm, damp, brown, trace fine grain sand, no odor,
8	3.3			CL	60		SILTY CLAY, STA, no odor,
10	3.7			CL	90		SILTY CLAY, STA, no odor,
12	3.5			CL	60		SILTY CLAY, low, soft, damp, brown, no odor,
14	2.5			CL	90		SILTY CLAY, STA, damper than above,no odor,
15	1.4			CLST	90	X	CLAYSTONE, very stiff, slightly sandy, pink, dry, no odor,
16	1.4			CLST	90		CLAYSTONE, STA.
17							
18							

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Western Refining SW, Inc.
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Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME75
Drilling Method	: Hollow Stem Auger - 7.5"
Sampling Method	: 2' Split Spoon - 2" Diameter
Comments	: Hand Augered to 6' BGL;
Total Depth	: 17' Grouted Borehole 9/19/16
Ground Water	: Not Encountered
Start Date	: 9/19/2016
Finish Date	: 9/19/2016

BORING NO. SWMU 10-24

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.452'
E	: W 108° 25.856'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							
1	2.4			ML	100		SILT, low, soft, damp, brown, no odor,
2							
3	2.5			ML	100	X	SILT, SIMILAR TO ABOVE (STA),
4							
5	1.1			ML	100		SILT, STA,
6							
7	3000			CL	90	X	SILTY CLAY, low, soft to firm, damp, dark brown, odor,
8							
9	2021			CL	90	X	SILTY CLAY, STA, sandy at base, very moist/oily phase separated hydrocarbon (psh) present, odor,
10							
11	307			CL	100		SILTY CLAY, low, firm, damp, brown, odor,
12							
13	443			CL	100		SILTY CLAY, STA, odor,
14	123			CL	90		SILTY CLAY, STA, odor,
15	56			CLST	90	X	CLAYSTONE, very stiff, slightly sandy, pink, dry, faint odor,
16	80			CLST	90		CLAYSTONE, STA.
17							
18							

1010 Travis Street
Houston, Texas 77002
713-955-1230

DiSorbo Consulting, LLC

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

10-24-2016 C:\Users\cholmes\Documents\M-Tech\samples\WEST16006\SWMU No. 10\SWMU 10-24.bor

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist	: Tracy Payne
Driller	: Enviro-Drill, Inc. / Cohagan
Drilling Rig	: CME75
Drilling Method	: Hollow Stem Auger - 7.5"
Sampling Method	: 2" Split Spoon - 2" Diameter
Comments	: Hand Augered to 6' BGL
Total Depth	: 19'
Ground Water	: 12'
Start Date	: 9/19/2016
Finish Date	: 9/19/2016

BORING NO. SWMU 10-25

(Sheet 1 of 1)

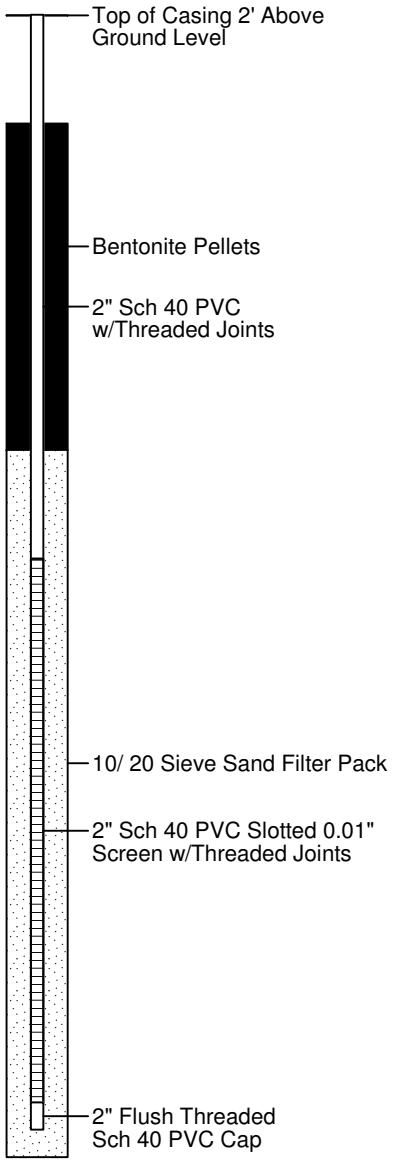
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.453'
E	: W 108° 25.842

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0							SILT, low, soft, damp, brown, no odor,
1	1.9			ML	100		
2							SILTY CLAY, low, soft, damp, brown, odor,
3	1319			CL	100		
4							SILTY CLAY, SIMILAR TO ABOVE (STA), odor,
5	187			CL	100		
6							SILTY CLAY, low, firm, damp, brown, odor,
7	108			CL	90		
8				CL	90		SILTY CLAY, STA, odor,
9	201			CL	90		SANDY CLAY, low, soft, damp, brown to black discoloration in sand, odor,
10				CL	90		SANDY CLAY, STA, odor,
11	367			CL	90		SILTY CLAY, low, firm, damp, brown, odor,
12	338	▼		CL	90		SANDY CLAY, low, very soft, saturated, dark brown, odor,
13	350			CL	100		SILTY CLAY, low, firm, damp, dark brown, odor,
14							SANDY CLAY, low, soft to firm, very damp to moist, dark brown, faint odor,
15	10.6			CL	100		
16				CL	100		SANDY CLAY, STA, faint odor,
17	5			CLST	100		CLAYSTONE, very stiff, dry, brown and grey,
18	5			CLST	100		CLAYSTONE, STA.
19							
20							

Saturation
▼ Saturation

Temporary Well Settings

Temp Well SWMU 10-25



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10-24-2016 C:\Users\cholmes\Documents\M-Tech\samples\WEST16006\SWMU No. 10\SWMU 10-25.bor

Appendix D

Analytical Data Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 05, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1504C86

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/29/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 01, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB01
Project: SWMU 10
Collection Date: 4/28/2015 4:50:00 PM
Lab ID: 1504C86-001
Matrix: AQUEOUS
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 1:48:33 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 1:48:33 PM	18985
Surr: DNOP	104	0	76.5-150		%REC	1	5/1/2015 1:48:33 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/5/2015 11:58:11 AM	R25979
Surr: BFB	92.9	0	80-120		%REC	1	5/5/2015 11:58:11 AM	R25979
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	4/30/2015 5:24:21 PM	R25896
Chloride	ND	0.13	0.50		mg/L	1	4/30/2015 5:24:21 PM	R25896
Sulfate	ND	0.11	0.50		mg/L	1	4/30/2015 5:24:21 PM	R25896
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Beryllium	0.00067	0.00031	0.0020	J	mg/L	1	4/30/2015 2:11:15 PM	R25881
Cadmium	ND	0.00097	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Chromium	0.0030	0.0018	0.0060	J	mg/L	1	4/30/2015 2:11:15 PM	R25881
Cobalt	ND	0.0013	0.0060		mg/L	1	4/30/2015 2:11:15 PM	R25881
Iron	ND	0.0073	0.020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Manganese	ND	0.00027	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Nickel	ND	0.0021	0.010		mg/L	1	4/30/2015 2:11:15 PM	R25881
Silver	ND	0.0012	0.0050		mg/L	1	4/30/2015 2:11:15 PM	R25881
Vanadium	ND	0.0015	0.050		mg/L	1	4/30/2015 2:11:15 PM	R25881
Zinc	0.016	0.0028	0.010		mg/L	1	4/30/2015 2:11:15 PM	R25881
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Beryllium	ND	0.00031	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Cadmium	ND	0.00097	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Chromium	ND	0.0022	0.0060		mg/L	1	5/4/2015 2:06:05 PM	R25943
Cobalt	ND	0.0013	0.0060		mg/L	1	5/4/2015 2:06:05 PM	R25943
Iron	ND	0.0073	0.020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Manganese	ND	0.0015	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Nickel	ND	0.0023	0.010		mg/L	1	5/4/2015 2:06:05 PM	R25943
Silver	ND	0.0021	0.0050		mg/L	1	5/4/2015 2:06:05 PM	R25943
Vanadium	ND	0.0015	0.050		mg/L	1	5/4/2015 2:06:05 PM	R25943
Zinc	ND	0.0036	0.010		mg/L	1	5/4/2015 2:06:05 PM	R25943
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00038	0.00014	0.0010	J	mg/L	1	5/11/2015 2:12:40 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB01
Project: SWMU 10
Collection Date: 4/28/2015 4:50:00 PM
Lab ID: 1504C86-001
Matrix: AQUEOUS
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.000026	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.00051	0.00022	0.0010	J	mg/L	1	5/11/2015 12:57:22 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 12:57:22 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 12:57:22 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 12:57:22 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:09:31 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB01
Project: SWMU 10
Collection Date: 4/28/2015 4:50:00 PM
Lab ID: 1504C86-001
Matrix: AQUEOUS
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 8:36:16 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB01
Project: SWMU 10
Collection Date: 4/28/2015 4:50:00 PM
Lab ID: 1504C86-001 **Matrix:** AQUEOUS **Received Date:** 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Surr: 2-Fluorophenol	89.9	0	14.9-111		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: Phenol-d5	86.1	0	11.3-108		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 2,4,6-Tribromophenol	108	0	15.7-154		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: Nitrobenzene-d5	111	0	47.8-106	S	%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 2-Fluorobiphenyl	106	0	21.3-123		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 4-Terphenyl-d14	93.2	0	14.3-135		%REC	1	5/5/2015 8:36:16 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Toluene	0.21	0.11	1.0	J	µg/L	1	5/6/2015 2:07:35 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Acetone	2.2	0.94	10	J	µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB01
Project: SWMU 10
Collection Date: 4/28/2015 4:50:00 PM
Lab ID: 1504C86-001
Matrix: AQUEOUS
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 2:07:35 PM	R26017
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB01
Project: SWMU 10
Collection Date: 4/28/2015 4:50:00 PM
Lab ID: 1504C86-001
Matrix: AQUEOUS
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	97.4	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017
Surr: Toluene-d8	98.2	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	150501022
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1504C86
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	150501022-001	**Sampling Date**	4/28/2015	**Date/Time Received**	5/1/2015 11:40 AM
Client Sample ID	1504C86-001H / SWMU 10 EB01			**Sampling Time**	4:50 PM
Matrix	Water	**Sample Location**			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	5/5/2015	CRW	EPA 335.4	

Authorized Signature

John Coddington, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 150501022
Project Name: 1504C86

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.500	mg/L	0.5	100.0	90-110	5/5/2015	5/5/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150424028-004	Cyanide	ND	0.512	mg/L	0.5	102.4	90-110	5/5/2015	5/5/2015

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	0.500	mg/L	0.5	100.0	2.4	0-20	5/5/2015	5/5/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/L	0.01	5/5/2015	5/5/2015

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 11, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762537-01

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C86-001I SWMU 10 EB01

Project # :

Collected By :
Collection Date : 04/28/15 16:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/11/15 10:38 Printed: 05/11/15 10:38

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Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Method Blank Summary

Instrument	Client Sample ID	Lab Sample ID	File Name	Analysis Date	Analysis Time
IC-13	Blank WG787240	Blank WG787240	8	5/8/2015	3:45 PM
IC-13	LCS WG787240	LCS WG787240	10	5/8/2015	4:04 PM
IC-13	LCSD WG787240	LCSD WG787240	11	5/8/2015	4:12 PM
IC-13	DUP WG787240	DUP WG787240	15	5/8/2015	5:12 PM
IC-13	MSD WG787240	MSD WG787240	24	5/8/2015	6:25 PM
IC-13	MS WG787240	MS WG787240	26	5/8/2015	6:55 PM
IC-13	1504C86-001I SWMU 10 EB01	L762537-01	42	5/8/2015	9:24 PM
IC-13	DUP WG787240	DUP WG787240	46	5/8/2015	9:57 PM

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Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Method Blank

Analyte	CAS	RDL	Qualifier
Hexavalent Chromium	18540-29-9	< 0.000500	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0018	91.5	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0019	95	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
Hexavalent Chromium	1	0.002	0.0018	91.5	0.0019	95	90 - 110		3.75	20	

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Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Sample Duplicate

L762055-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Hexavalent Chromium	1	<0.0005	<0.0005		20	

Sample Duplicate

L762910-04

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Hexavalent Chromium	1	0.0008	0.0007	6.8	20	

Matrix Spike / Matrix Spike Duplicate

L762372-02

nalyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
exavalent Chromium	1	0.05	0.001	0.0509	99.8	0.0508	99.6	90 - 110		0.2	20	

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Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 3:56 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.049	98.5	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 6:09 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.049	98.1	90 - 110

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Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 6:34 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.050	99.2	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 7:05 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.050	101	90 - 110

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Est. 1970

Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 8:59 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.051	101	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 10:05 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.051	102	90 - 110

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25881**	RunNo: **25881**
Prep Date:	Analysis Date: **4/30/2015**	SeqNo: **767038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0023	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25881**	RunNo: **25881**
Prep Date:	Analysis Date: **4/30/2015**	SeqNo: **767039** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.47	0.0020	0.5000	0	93.3	85	115			
Nickel	0.48	0.010	0.5000	0	96.8	85	115			
Silver	0.089	0.0050	0.1000	0	89.3	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.48	0.010	0.5000	0	97.0	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.1	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25881**	RunNo: **25881**
Prep Date:	Analysis Date: **4/30/2015**	SeqNo: **767040** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0015	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25881**	RunNo: **25881**
Prep Date:	Analysis Date: **4/30/2015**	SeqNo: **767041** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.2	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.2	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.088	0.0050	0.1000	0	87.9	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.5	85	115			
Nickel	0.47	0.010	0.5000	0	93.8	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **R26119**		RunNo: **26119**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774818**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **R26119**		RunNo: **26119**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774819**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID: **R26119**		RunNo: **26119**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774821**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID: **R26119**		RunNo: **26119**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774822**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R25896**	RunNo:	**25896**					
Prep Date:		Analysis Date:	**4/30/2015**	SeqNo:	**767580**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R25896**	RunNo:	**25896**					
Prep Date:		Analysis Date:	**4/30/2015**	SeqNo:	**767581**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.3	90	110			
Chloride	4.8	0.50	5.000	0	96.2	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			

Sample ID	**1504C86-001EMS**	SampType:	**MS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**SWMU 10 EB01**	Batch ID:	**R25896**	RunNo:	**25896**					
Prep Date:		Analysis Date:	**4/30/2015**	SeqNo:	**767603**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	66.1	113			
Chloride	4.8	0.50	5.000	0	95.1	81.8	112			
Sulfate	9.6	0.50	10.00	0	95.7	88.3	114			

Sample ID	**1504C86-001EMSD**	SampType:	**MSD**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**SWMU 10 EB01**	Batch ID:	**R25896**	RunNo:	**25896**					
Prep Date:		Analysis Date:	**4/30/2015**	SeqNo:	**767604**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	66.1	113	2.46	20	
Chloride	4.8	0.50	5.000	0	96.1	81.8	112	1.00	20	
Sulfate	9.7	0.50	10.00	0	96.6	88.3	114	0.907	20	

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R25896**	RunNo:	**25896**					
Prep Date:		Analysis Date:	**4/30/2015**	SeqNo:	**767632**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**
Client ID:	**LCSW**	Batch ID:	**R25896**	RunNo:	**25896**
Prep Date:		Analysis Date:	**4/30/2015**	SeqNo:	**767633**
Units:	**mg/L**				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.7	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Sulfate	9.5	0.50	10.00	0	94.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Sample ID **1504C86-001CMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **SWMU 10 EB01**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767980** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	115	75.9	164			
Surr: DNOP	0.60		0.5000		119	76.5	150			

Sample ID **1504C86-001CMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **SWMU 10 EB01**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	75.9	164	2.68	22.1	
Surr: DNOP	0.59		0.5000		117	76.5	150	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID: **R25939**			RunNo: **25939**					
Prep Date:		Analysis Date: **5/4/2015**			SeqNo: **768862**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	**2.5UG GRO LCS**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID: **R25939**			RunNo: **25939**					
Prep Date:		Analysis Date: **5/4/2015**			SeqNo: **768863**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		91.1	80	120			

Sample ID	**5ML RB**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID: **R25979**			RunNo: **25979**					
Prep Date:		Analysis Date: **5/5/2015**			SeqNo: **769934**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		93.8	80	120			

Sample ID	**2.5UG GRO LCS**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID: **R25979**			RunNo: **25979**					
Prep Date:		Analysis Date: **5/5/2015**			SeqNo: **769935**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.7	80	120			
Surr: BFB	20		20.00		99.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcsd-18996**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**18996**	RunNo:	**25988**					
Prep Date:	**5/1/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770338**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1504C86** RcptNo: **1**

Received by/date: KM 04/29/15

Logged By: **Ashley Gallegos** **4/29/2015 4:00:00 PM** AG

Completed By: **Ashley Gallegos** **4/30/2015 11:21:25 AM** AG

Reviewed By: 04/30/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: AG

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 2.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
4/28/15	1650	WATER	SWMU 10 EB01	40 ML VOA-6	HCL	1504C86-001
				1 LITER AMBER-2	NEAT	
				250 ML AMBER-1	NEAT	
				100 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	NaOH	
				50 ML PLASTIC-1	$(NH_4)_2SO_4$	

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS - TOTAL & DISSOLVED	(SEE ATTACHED SHEET)	GEN CHEM	CR6	Air Bubbles (Y or N)
		✓							✓						
										✓			✓		
			✓												
											✓				
											✓				
						✓									
														✓	

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	0720			4/29/15	7:22
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	1400			04/29/15	1600

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 05, 2015

Thurman B. Larsen

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: SWMU 10 OrderNo.: 1504C87

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/29/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 04, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 1:53:00 PM
Lab ID: 1504C87-001 **Matrix:** SOIL **Received Date:** 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	93	5.4	9.8		mg/Kg-dr	1	5/1/2015 12:54:24 PM	18983
Motor Oil Range Organics (MRO)	53	49	49		mg/Kg-dr	1	5/1/2015 12:54:24 PM	18983
Surr: DNOP	105	0	57.9-140		%REC	1	5/1/2015 12:54:24 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.0	3.5		mg/Kg-dr	1	5/1/2015 11:11:48 AM	R25904
Surr: BFB	90.1	0	80-120		%REC	1	5/1/2015 11:11:48 AM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	19	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0066	0.0038	0.043	J	mg/Kg-dr	1	5/6/2015 3:17:02 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Arsenic	0.97	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Barium	200	0.036	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Beryllium	1.1	0.0089	0.18		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Chromium	10	0.072	0.36		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Cobalt	5.2	0.045	0.36		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 10:48:49 AM	19080
Lead	3.2	0.13	0.30		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Manganese	300	0.070	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Nickel	9.1	0.15	0.60		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Vanadium	20	0.040	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Zinc	17	0.77	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Acenaphthylene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benz(a)anthracene	ND	0.097	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 1:53:00 PM
Lab ID: 1504C87-001
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.070	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.094	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Carbazole	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chloroaniline	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Chloronaphthalene	ND	0.13	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Chlorophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Chrysene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Di-n-butyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Di-n-octyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3,3´-Dichlorobenzidine	ND	0.095	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dimethyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dimethylphenol	ND	0.097	0.37		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.067	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dinitrophenol	ND	0.051	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorocyclopentadiene	ND	0.085	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Isophorone	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 1:53:00 PM
Lab ID: 1504C87-001 **Matrix:** SOIL **Received Date:** 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Methylphenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Nitroaniline	ND	0.11	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Nitrophenol	ND	0.11	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pentachlorophenol	ND	0.077	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pyridine	ND	0.10	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Surr: 2-Fluorophenol	80.2		26.4-129		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: Phenol-d5	80.8		34.8-118		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 2,4,6-Tribromophenol	86.9		26.8-128		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: Nitrobenzene-d5	77.7		35.8-124		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 2-Fluorobiphenyl	82.7		24.5-139		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 4-Terphenyl-d14	80.5		29.4-129		%REC	1	5/7/2015 4:00:49 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0051	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Toluene	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Ethylbenzene	ND	0.0032	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.0049	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,4-Trimethylbenzene	0.0061	0.0017	0.035	J	mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3,5-Trimethylbenzene	ND	0.0023	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0027	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Naphthalene	ND	0.0082	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1-Methylnaphthalene	ND	0.021	0.14		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Methylnaphthalene	ND	0.023	0.14		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 1:53:00 PM
Lab ID: 1504C87-001
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Acetone	0.043	0.026	0.52	J	mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromobenzene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromodichloromethane	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromoform	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromomethane	ND	0.0067	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Butanone	ND	0.022	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Carbon disulfide	ND	0.025	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Carbon tetrachloride	ND	0.0034	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chlorobenzene	ND	0.0027	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloroethane	ND	0.027	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloroform	ND	0.0036	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloromethane	ND	0.0040	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Chlorotoluene	ND	0.0039	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Chlorotoluene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
cis-1,2-DCE	ND	0.0044	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
cis-1,3-Dichloropropene	ND	0.0024	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.0059	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dibromochloromethane	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dibromomethane	ND	0.0036	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichlorobenzene	ND	0.0021	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3-Dichlorobenzene	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,4-Dichlorobenzene	ND	0.0043	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dichlorodifluoromethane	ND	0.0087	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloroethane	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloroethene	ND	0.0024	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichloropropane	ND	0.0019	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3-Dichloropropane	ND	0.0048	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2,2-Dichloropropane	ND	0.0050	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloropropene	ND	0.0051	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Hexachlorobutadiene	ND	0.0048	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Hexanone	ND	0.0085	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Isopropylbenzene	ND	0.0029	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Isopropyltoluene	ND	0.0025	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Methyl-2-pentanone	ND	0.0060	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Methylene chloride	ND	0.014	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
n-Butylbenzene	ND	0.0030	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
n-Propylbenzene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
sec-Butylbenzene	ND	0.0049	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Styrene	ND	0.0063	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 1:53:00 PM
Lab ID: 1504C87-001
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
tert-Butylbenzene	ND	0.0040	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0042	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Tetrachloroethene (PCE)	ND	0.0030	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
trans-1,2-DCE	ND	0.0022	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
trans-1,3-Dichloropropene	ND	0.0062	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,3-Trichlorobenzene	ND	0.0074	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,4-Trichlorobenzene	ND	0.0064	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,1-Trichloroethane	ND	0.0052	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,2-Trichloroethane	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Trichloroethene (TCE)	ND	0.0034	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Trichlorofluoromethane	ND	0.010	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,3-Trichloropropane	ND	0.0058	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Vinyl chloride	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Xylenes, Total	ND	0.0096	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Surr: Dibromofluoromethane	100		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: 1,2-Dichloroethane-d4	92.1		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: Toluene-d8	92.1		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: 4-Bromofluorobenzene	93.6		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (4-6')
Project: SWMU 10
Collection Date: 4/28/2015 2:04:00 PM
Lab ID: 1504C87-002 **Matrix:** SOIL **Received Date:** 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/1/2015 10:39:47 AM	18983
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/1/2015 10:39:47 AM	18983
Surr: DNOP	104	0	57.9-140		%REC	1	5/1/2015 10:39:47 AM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.99	3.3		mg/Kg-dr	1	5/1/2015 11:40:34 AM	R25904
Surr: BFB	89.9	0	80-120		%REC	1	5/1/2015 11:40:34 AM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	21	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0063	0.0036	0.041	J	mg/Kg-dr	1	5/6/2015 3:18:49 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.9	1.7	3.2	J	mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Arsenic	1.7	0.37	3.2	J	mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Barium	130	0.038	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Beryllium	1.1	0.0094	0.19		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Cadmium	ND	0.035	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Chromium	10	0.077	0.38		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Cobalt	5.4	0.048	0.38		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Iron	17000	77	320		mg/Kg-dr	100	5/7/2015 10:51:53 AM	19080
Lead	3.2	0.14	0.32		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Manganese	290	0.075	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Nickel	9.6	0.16	0.64		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Selenium	ND	1.9	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Silver	ND	0.038	0.32		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Vanadium	18	0.042	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Zinc	16	0.82	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Acenaphthylene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benz(a)anthracene	ND	0.099	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (4-6')
Project: SWMU 10
Collection Date: 4/28/2015 2:04:00 PM
Lab ID: 1504C87-002
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.072	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.096	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Carbazole	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chloro-3-methylphenol	ND	0.13	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chloroaniline	ND	0.12	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Chloronaphthalene	ND	0.13	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Chlorophenol	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chlorophenyl phenyl ether	ND	0.19	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Chrysene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Di-n-butyl phthalate	ND	0.14	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Di-n-octyl phthalate	ND	0.14	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dibenz(a,h)anthracene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3,3´-Dichlorobenzidine	ND	0.097	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dichlorophenol	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dimethylphenol	ND	0.099	0.38		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.068	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dinitrophenol	ND	0.052	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorocyclopentadiene	ND	0.087	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Isophorone	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (4-6')
Project: SWMU 10
Collection Date: 4/28/2015 2:04:00 PM
Lab ID: 1504C87-002
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Methylphenol	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Nitroaniline	ND	0.11	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Nitrobenzene	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Nitrophenol	ND	0.11	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pentachlorophenol	ND	0.079	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pyridine	ND	0.11	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4,5-Trichlorophenol	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4,6-Trichlorophenol	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Surr: 2-Fluorophenol	68.1		26.4-129		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: Phenol-d5	70.1		34.8-118		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 2,4,6-Tribromophenol	65.1		26.8-128		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: Nitrobenzene-d5	65.6		35.8-124		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 2-Fluorobiphenyl	65.1		24.5-139		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 4-Terphenyl-d14	71.5		29.4-129		%REC	1	5/7/2015 5:25:11 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00211	0.000387	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Toluene	0.00253	0.000179	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Ethylbenzene	0.0318	0.000289	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Xylenes, Total	0.197	0.00103	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Methyl tert-butyl ether (MTBE)	0.00669	0.000721	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,4-Trimethylbenzene	0.000619	0.000449	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3,5-Trimethylbenzene	0.000318	0.000302	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000461	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000206	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Naphthalene	0.000877	0.000562	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1-Methylnaphthalene	ND	0.000675	0.00344		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (4-6')
Project: SWMU 10
Collection Date: 4/28/2015 2:04:00 PM
Lab ID: 1504C87-002
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000672	0.00344		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Acetone	0.00926	0.00107	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromobenzene	ND	0.000478	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromodichloromethane	ND	0.000232	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromoform	ND	0.000445	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromomethane	ND	0.00102	0.00258		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Butanone	0.00257	0.000550	0.00860	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Carbon tetrachloride	ND	0.000311	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chlorobenzene	ND	0.000174	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloroethane	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloroform	ND	0.000354	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloromethane	ND	0.000203	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Chlorotoluene	ND	0.000336	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Carbon disulfide	ND	0.000778	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
4-Chlorotoluene	ND	0.000331	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
cis-1,2-DCE	ND	0.000455	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
cis-1,3-Dichloropropene	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000505	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromochloromethane	ND	0.000193	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromomethane	ND	0.000976	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichlorobenzene	ND	0.000382	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3-Dichlorobenzene	ND	0.000291	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,4-Dichlorobenzene	ND	0.000270	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dichlorodifluoromethane	ND	0.000702	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloroethane	ND	0.000402	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloroethene	ND	0.000287	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichloropropane	ND	0.000367	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3-Dichloropropane	ND	0.000268	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2,2-Dichloropropane	ND	0.000299	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloropropene	ND	0.000315	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Hexachlorobutadiene	ND	0.000347	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Isopropylbenzene	ND	0.000399	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
4-Isopropyltoluene	ND	0.000667	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Methylene chloride	0.000619	0.000425	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
n-Butylbenzene	ND	0.000706	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Hexanone	ND	0.000358	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
n-Propylbenzene	ND	0.000322	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
sec-Butylbenzene	0.000593	0.000434	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Styrene	ND	0.000285	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (4-6')
Project: SWMU 10
Collection Date: 4/28/2015 2:04:00 PM
Lab ID: 1504C87-002
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000726	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
tert-Butylbenzene	ND	0.000263	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000280	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000378	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Tetrachloroethene (PCE)	ND	0.000341	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
trans-1,2-DCE	ND	0.000278	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
trans-1,3-Dichloropropene	ND	0.000225	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,3-Trichlorobenzene	ND	0.000629	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,4-Trichlorobenzene	ND	0.000644	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,1-Trichloroethane	ND	0.000245	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,2-Trichloroethane	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Trichloroethene (TCE)	ND	0.000342	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Trichlorofluoromethane	ND	0.000347	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,3-Trichloropropane	ND	0.000604	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Vinyl chloride	ND	0.000196	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: 4-Bromofluorobenzene	113	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: Toluene-d8	95.7	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 2:14:00 PM
Lab ID: 1504C87-003
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/1/2015 11:06:06 AM	18983
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/1/2015 11:06:06 AM	18983
Surr: DNOP	101	0	57.9-140		%REC	1	5/1/2015 11:06:06 AM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.6		mg/Kg-dr	1	5/1/2015 12:09:22 PM	R25904
Surr: BFB	89.0	0	80-120		%REC	1	5/1/2015 12:09:22 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	15	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0036	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:20:37 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.5	1.5	2.9	J	mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Arsenic	1.7	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Barium	170	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Chromium	16	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Cobalt	7.0	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Iron	23000	70	290		mg/Kg-dr	100	5/7/2015 10:53:17 AM	19080
Lead	2.0	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Manganese	480	0.14	0.23		mg/Kg-dr	2	5/7/2015 1:03:16 PM	19080
Nickel	16	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Vanadium	17	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Zinc	22	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Anthracene	ND	0.099	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 2:14:00 PM
Lab ID: 1504C87-003
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3,3´-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 2:14:00 PM
Lab ID: 1504C87-003
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pyridine	ND	0.098	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Surr: 2-Fluorophenol	62.8		26.4-129		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: Phenol-d5	62.6		34.8-118		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 2,4,6-Tribromophenol	58.1		26.8-128		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: Nitrobenzene-d5	60.8		35.8-124		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 2-Fluorobiphenyl	62.6		24.5-139		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 4-Terphenyl-d14	62.5		29.4-129		%REC	1	5/7/2015 5:53:16 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0146	0.000447	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Toluene	0.00836	0.000206	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Ethylbenzene	0.00192	0.000334	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Xylenes, Total	0.00647	0.00118	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000832	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,4-Trimethylbenzene	0.00162	0.000519	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3,5-Trimethylbenzene	0.000993	0.000348	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000532	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000237	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Naphthalene	ND	0.000649	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1-Methylnaphthalene	ND	0.000780	0.00397		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 2:14:00 PM
Lab ID: 1504C87-003
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000776	0.00397		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Acetone	0.00324	0.00124	0.00993	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromobenzene	ND	0.000552	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromodichloromethane	ND	0.000268	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromoform	ND	0.000514	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromomethane	ND	0.00117	0.00298		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Butanone	0.00156	0.000636	0.00993	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Carbon tetrachloride	ND	0.000359	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chlorobenzene	ND	0.000201	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloroethane	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloroform	ND	0.000409	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloromethane	ND	0.000234	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Chlorotoluene	ND	0.000387	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Carbon disulfide	ND	0.000898	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
4-Chlorotoluene	ND	0.000382	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
cis-1,2-DCE	ND	0.000525	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
cis-1,3-Dichloropropene	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000583	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromochloromethane	ND	0.000223	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromomethane	ND	0.00113	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichlorobenzene	ND	0.000441	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3-Dichlorobenzene	ND	0.000336	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,4-Dichlorobenzene	ND	0.000312	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dichlorodifluoromethane	ND	0.000811	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloroethane	ND	0.000464	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloroethene	ND	0.000331	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichloropropane	ND	0.000424	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3-Dichloropropane	ND	0.000309	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2,2-Dichloropropane	ND	0.000345	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloropropene	ND	0.000364	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Hexachlorobutadiene	ND	0.000401	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Isopropylbenzene	ND	0.000461	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
4-Isopropyltoluene	ND	0.000770	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Methylene chloride	0.000566	0.000491	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
n-Butylbenzene	ND	0.000815	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Hexanone	ND	0.000413	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
n-Propylbenzene	ND	0.000372	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
sec-Butylbenzene	0.000715	0.000501	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Styrene	ND	0.000329	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 2:14:00 PM
Lab ID: 1504C87-003
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000838	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
tert-Butylbenzene	ND	0.000304	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000323	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000437	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Tetrachloroethene (PCE)	ND	0.000394	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
trans-1,2-DCE	ND	0.000321	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
trans-1,3-Dichloropropene	ND	0.000260	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,3-Trichlorobenzene	ND	0.000726	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,4-Trichlorobenzene	ND	0.000744	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,1-Trichloroethane	ND	0.000282	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,2-Trichloroethane	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Trichloroethene (TCE)	ND	0.000394	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Trichlorofluoromethane	ND	0.000401	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,3-Trichloropropane	ND	0.000697	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Vinyl chloride	ND	0.000227	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: Dibromofluoromethane	101	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: Toluene-d8	87.0	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 3:46:00 PM
Lab ID: 1504C87-004
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	84	5.5	9.9		mg/Kg-dr	1	5/1/2015 2:20:08 PM	18983
Motor Oil Range Organics (MRO)	90	49	49		mg/Kg-dr	1	5/1/2015 2:20:08 PM	18983
Surr: DNOP	110	0	57.9-140		%REC	1	5/1/2015 2:20:08 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.5		mg/Kg-dr	1	5/1/2015 12:38:08 PM	R25904
Surr: BFB	89.7	0	80-120		%REC	1	5/1/2015 12:38:08 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	16	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.10	0.0036	0.040		mg/Kg-dr	1	5/6/2015 3:22:25 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Arsenic	2.3	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Barium	280	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Beryllium	0.88	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Chromium	17	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Cobalt	5.0	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Iron	15000	70	290		mg/Kg-dr	100	5/7/2015 10:54:40 AM	19080
Lead	3.6	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Manganese	820	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:25:29 PM	19080
Nickel	8.9	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Vanadium	22	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Zinc	25	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Acenaphthylene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Aniline	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Anthracene	ND	0.20	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Azobenzene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benz(a)anthracene	ND	0.19	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(a)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(b)fluoranthene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(g,h,i)perylene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(k)fluoranthene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 3:46:00 PM
Lab ID: 1504C87-004
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.14	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzyl alcohol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroethoxy)methane	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroethyl)ether	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.18	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-ethylhexyl)phthalate	0.29	0.27	1.2	J	mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Bromophenyl phenyl ether	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Butyl benzyl phthalate	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Carbazole	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chloro-3-methylphenol	ND	0.24	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chloroaniline	ND	0.22	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Chloronaphthalene	ND	0.25	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Chlorophenol	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chlorophenyl phenyl ether	ND	0.35	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Chrysene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Di-n-butyl phthalate	ND	0.27	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Di-n-octyl phthalate	ND	0.26	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dibenz(a,h)anthracene	ND	0.26	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dibenzofuran	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,2-Dichlorobenzene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,3-Dichlorobenzene	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,4-Dichlorobenzene	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3,3´-Dichlorobenzidine	ND	0.18	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Diethyl phthalate	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dimethyl phthalate	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dichlorophenol	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dimethylphenol	ND	0.19	0.71		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.13	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dinitrophenol	ND	0.098	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dinitrotoluene	ND	0.21	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,6-Dinitrotoluene	ND	0.26	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Fluoranthene	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Fluorene	ND	0.32	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorobenzene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorobutadiene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorocyclopentadiene	ND	0.16	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachloroethane	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Isophorone	ND	0.25	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 3:46:00 PM
Lab ID: 1504C87-004
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Methylphenol	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3+4-Methylphenol	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
N-Nitrosodi-n-propylamine	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
N-Nitrosodiphenylamine	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Naphthalene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Nitroaniline	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3-Nitroaniline	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Nitroaniline	ND	0.21	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Nitrobenzene	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Nitrophenol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Nitrophenol	ND	0.20	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pentachlorophenol	ND	0.15	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Phenanthrene	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Phenol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pyrene	ND	0.31	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pyridine	ND	0.20	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,2,4-Trichlorobenzene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4,5-Trichlorophenol	ND	0.28	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4,6-Trichlorophenol	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Surr: 2-Fluorophenol	52.2		26.4-129		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: Phenol-d5	52.1		34.8-118		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 2,4,6-Tribromophenol	52.8		26.8-128		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: Nitrobenzene-d5	49.1		35.8-124		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 2-Fluorobiphenyl	52.1		24.5-139		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 4-Terphenyl-d14	56.7		29.4-129		%REC	1	5/7/2015 6:21:19 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.000872	0.000336	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Toluene	0.00116	0.000155	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Ethylbenzene	0.000313	0.000251	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Xylenes, Total	0.00108	0.000889	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000625	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,4-Trimethylbenzene	ND	0.000389	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3,5-Trimethylbenzene	ND	0.000261	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000399	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000178	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Naphthalene	ND	0.000487	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1-Methylnaphthalene	ND	0.000585	0.00298		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 3:46:00 PM
Lab ID: 1504C87-004
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000582	0.00298		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Acetone	0.0201	0.000931	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromobenzene	ND	0.000415	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromodichloromethane	ND	0.000201	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromoform	ND	0.000386	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromomethane	ND	0.000881	0.00224		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Butanone	0.00273	0.000477	0.00745	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Carbon tetrachloride	ND	0.000270	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chlorobenzene	ND	0.000151	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloroethane	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloroform	ND	0.000307	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloromethane	ND	0.000176	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Chlorotoluene	ND	0.000291	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Carbon disulfide	ND	0.000674	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
4-Chlorotoluene	ND	0.000287	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
cis-1,2-DCE	ND	0.000394	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
cis-1,3-Dichloropropene	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000438	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dibromochloromethane	ND	0.000167	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dibromomethane	ND	0.000846	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichlorobenzene	ND	0.000331	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3-Dichlorobenzene	ND	0.000253	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,4-Dichlorobenzene	ND	0.000234	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dichlorodifluoromethane	ND	0.000608	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloroethane	ND	0.000348	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloroethene	ND	0.000249	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichloropropane	ND	0.000318	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3-Dichloropropane	ND	0.000232	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2,2-Dichloropropane	ND	0.000259	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloropropene	ND	0.000273	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Hexachlorobutadiene	ND	0.000301	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Isopropylbenzene	ND	0.000346	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
4-Isopropyltoluene	ND	0.000578	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Methylene chloride	0.000387	0.000368	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
n-Butylbenzene	ND	0.000612	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Hexanone	0.000656	0.000310	0.00745	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
n-Propylbenzene	ND	0.000279	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
sec-Butylbenzene	ND	0.000376	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Styrene	ND	0.000247	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (2-4')
Project: SWMU 10
Collection Date: 4/28/2015 3:46:00 PM
Lab ID: 1504C87-004
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000629	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
tert-Butylbenzene	ND	0.000228	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000242	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000328	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Tetrachloroethene (PCE)	ND	0.000295	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
trans-1,2-DCE	ND	0.000241	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
trans-1,3-Dichloropropene	ND	0.000195	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,3-Trichlorobenzene	ND	0.000545	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,4-Trichlorobenzene	ND	0.000558	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,1-Trichloroethane	ND	0.000212	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,2-Trichloroethane	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Trichloroethene (TCE)	ND	0.000296	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Trichlorofluoromethane	ND	0.000301	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,3-Trichloropropane	ND	0.000523	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Vinyl chloride	ND	0.000170	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Surr: 1,2-Dichloroethane-d4	96.2	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: Dibromofluoromethane	99.4	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: Toluene-d8	89.8	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (6-8')
Project: SWMU 10
Collection Date: 4/28/2015 3:57:00 PM
Lab ID: 1504C87-005
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	42	5.5	9.9		mg/Kg-dr	1	5/1/2015 2:47:10 PM	18983
Motor Oil Range Organics (MRO)	69	50	50		mg/Kg-dr	1	5/1/2015 2:47:10 PM	18983
Surr: DNOP	113	0	57.9-140		%REC	1	5/1/2015 2:47:10 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.98	3.3		mg/Kg-dr	1	5/1/2015 1:06:50 PM	R25904
Surr: BFB	91.6	0	80-120		%REC	1	5/1/2015 1:06:50 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	19	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.087	0.0037	0.042		mg/Kg-dr	1	5/6/2015 3:24:12 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Arsenic	2.6	0.69	5.9	J	mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Barium	2900	0.35	1.2		mg/Kg-dr	10	5/8/2015 2:27:08 PM	19080
Beryllium	0.92	0.017	0.35		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Cadmium	ND	0.066	0.24		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Chromium	29	0.14	0.71		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Cobalt	6.4	0.089	0.71		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Iron	13000	71	300		mg/Kg-dr	100	5/7/2015 10:56:03 AM	19080
Lead	5.6	0.26	0.59		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Manganese	1000	0.69	1.2		mg/Kg-dr	10	5/8/2015 2:27:08 PM	19080
Nickel	10	0.30	1.2		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Selenium	ND	3.6	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Silver	ND	0.070	0.59		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Vanadium	23	0.079	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Zinc	35	1.5	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Acenaphthylene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benz(a)anthracene	ND	0.097	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (6-8')
Project: SWMU 10
Collection Date: 4/28/2015 3:57:00 PM
Lab ID: 1504C87-005
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.070	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.094	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Carbazole	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chloroaniline	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Chloronaphthalene	ND	0.13	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Chlorophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Chrysene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Di-n-butyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Di-n-octyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3,3´-Dichlorobenzidine	ND	0.095	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dimethyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dimethylphenol	ND	0.097	0.37		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.067	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dinitrophenol	ND	0.051	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorocyclopentadiene	ND	0.085	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Isophorone	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (6-8')
Project: SWMU 10
Collection Date: 4/28/2015 3:57:00 PM
Lab ID: 1504C87-005
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Methylphenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Nitroaniline	ND	0.11	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Nitrophenol	ND	0.11	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pentachlorophenol	ND	0.077	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pyridine	ND	0.10	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Surr: 2-Fluorophenol	68.7		26.4-129		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: Phenol-d5	72.7		34.8-118		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 2,4,6-Tribromophenol	68.5		26.8-128		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: Nitrobenzene-d5	62.6		35.8-124		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 2-Fluorobiphenyl	64.8		24.5-139		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 4-Terphenyl-d14	64.6		29.4-129		%REC	1	5/7/2015 6:49:18 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00319	0.000368	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Toluene	0.00301	0.000170	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Ethylbenzene	0.000800	0.000275	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Xylenes, Total	0.00181	0.000974	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000685	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,4-Trimethylbenzene	0.000564	0.000427	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3,5-Trimethylbenzene	0.000351	0.000287	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000438	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000195	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Naphthalene	ND	0.000534	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1-Methylnaphthalene	ND	0.000641	0.00327		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (6-8')
Project: SWMU 10
Collection Date: 4/28/2015 3:57:00 PM
Lab ID: 1504C87-005
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000638	0.00327		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Acetone	0.00534	0.00102	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromobenzene	ND	0.000454	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromodichloromethane	ND	0.000221	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromoform	ND	0.000423	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromomethane	ND	0.000966	0.00245		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Butanone	0.00136	0.000523	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Carbon tetrachloride	ND	0.000296	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chlorobenzene	ND	0.000166	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloroethane	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloroform	ND	0.000336	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloromethane	ND	0.000193	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Chlorotoluene	ND	0.000319	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Carbon disulfide	ND	0.000739	0.00817		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
4-Chlorotoluene	ND	0.000315	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
cis-1,2-DCE	ND	0.000432	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
cis-1,3-Dichloropropene	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000480	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dibromochloromethane	ND	0.000183	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dibromomethane	ND	0.000927	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichlorobenzene	ND	0.000362	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3-Dichlorobenzene	ND	0.000277	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,4-Dichlorobenzene	ND	0.000256	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dichlorodifluoromethane	ND	0.000667	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloroethane	ND	0.000382	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloroethene	ND	0.000273	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichloropropane	ND	0.000349	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3-Dichloropropane	ND	0.000254	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2,2-Dichloropropane	ND	0.000284	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloropropene	ND	0.000299	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Hexachlorobutadiene	ND	0.000330	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Isopropylbenzene	ND	0.000379	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
4-Isopropyltoluene	ND	0.000634	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Methylene chloride	0.000547	0.000404	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
n-Butylbenzene	ND	0.000671	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Hexanone	0.000588	0.000340	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
n-Propylbenzene	ND	0.000306	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
sec-Butylbenzene	0.000555	0.000413	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Styrene	ND	0.000271	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (6-8')
Project: SWMU 10
Collection Date: 4/28/2015 3:57:00 PM
Lab ID: 1504C87-005
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000690	0.00817		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
tert-Butylbenzene	ND	0.000250	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000266	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000359	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Tetrachloroethene (PCE)	ND	0.000324	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
trans-1,2-DCE	ND	0.000264	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
trans-1,3-Dichloropropene	ND	0.000214	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,3-Trichlorobenzene	ND	0.000598	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,4-Trichlorobenzene	ND	0.000612	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,1-Trichloroethane	ND	0.000232	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,2-Trichloroethane	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Trichloroethene (TCE)	ND	0.000325	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Trichlorofluoromethane	ND	0.000330	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,3-Trichloropropane	ND	0.000573	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Vinyl chloride	ND	0.000187	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Surr: 1,2-Dichloroethane-d4	99.3	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: 4-Bromofluorobenzene	89.3	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: Dibromofluoromethane	99.0	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: Toluene-d8	92.0	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 4:07:00 PM
Lab ID: 1504C87-006 **Matrix:** SOIL **Received Date:** 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.9		mg/Kg-dr	1	5/1/2015 12:27:28 PM	18983
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/1/2015 12:27:28 PM	18983
Surr: DNOP	107	0	57.9-140		%REC	1	5/1/2015 12:27:28 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.6		mg/Kg-dr	1	5/1/2015 1:35:34 PM	R25904
Surr: BFB	90.2	0	80-120		%REC	1	5/1/2015 1:35:34 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	17	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0049	0.0032	0.037	J	mg/Kg-dr	1	5/6/2015 3:26:01 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Barium	750	0.18	0.60		mg/Kg-dr	5	5/8/2015 2:28:47 PM	19080
Beryllium	1.1	0.0089	0.18		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Chromium	14	0.072	0.36		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Cobalt	8.8	0.045	0.36		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Iron	22000	72	300		mg/Kg-dr	100	5/7/2015 11:02:21 AM	19080
Lead	1.9	0.13	0.30		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Manganese	1200	0.35	0.60		mg/Kg-dr	5	5/8/2015 2:28:47 PM	19080
Nickel	16	0.15	0.60		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Vanadium	16	0.040	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Zinc	27	0.77	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benz(a)anthracene	ND	0.095	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(a)pyrene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 4:07:00 PM
Lab ID: 1504C87-006
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.069	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.092	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Butyl benzyl phthalate	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chloroaniline	ND	0.11	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Di-n-butyl phthalate	ND	0.14	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3,3´-Dichlorobenzidine	ND	0.093	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Diethyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dimethylphenol	ND	0.095	0.36		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.065	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dinitrophenol	ND	0.050	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Fluoranthene	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorocyclopentadiene	ND	0.083	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 4:07:00 PM
Lab ID: 1504C87-006
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Nitroaniline	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3-Nitroaniline	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pentachlorophenol	ND	0.075	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Phenanthrene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pyrene	ND	0.16	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Surr: 2-Fluorophenol	72.6		26.4-129		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: Phenol-d5	71.3		34.8-118		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 2,4,6-Tribromophenol	69.6		26.8-128		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: Nitrobenzene-d5	65.6		35.8-124		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 2-Fluorobiphenyl	67.9		24.5-139		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 4-Terphenyl-d14	68.3		29.4-129		%REC	1	5/7/2015 7:17:20 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0141	0.000489	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Toluene	0.0100	0.000226	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Ethylbenzene	0.00231	0.000365	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Xylenes, Total	0.00707	0.00129	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000909	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,4-Trimethylbenzene	0.00184	0.000567	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3,5-Trimethylbenzene	0.00123	0.000380	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000581	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000259	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Naphthalene	ND	0.000709	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1-Methylnaphthalene	ND	0.000852	0.00434		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 4:07:00 PM
Lab ID: 1504C87-006
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000848	0.00434		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Acetone	0.00158	0.00135	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromobenzene	ND	0.000603	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromodichloromethane	ND	0.000293	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromoform	ND	0.000562	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromomethane	ND	0.00128	0.00325		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Butanone	0.00151	0.000695	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Carbon tetrachloride	ND	0.000393	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chlorobenzene	ND	0.000220	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloroethane	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloroform	ND	0.000447	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloromethane	ND	0.000256	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Chlorotoluene	ND	0.000423	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Carbon disulfide	ND	0.000982	0.0108		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
4-Chlorotoluene	ND	0.000418	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
cis-1,2-DCE	ND	0.000574	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
cis-1,3-Dichloropropene	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000637	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dibromochloromethane	ND	0.000243	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dibromomethane	ND	0.00123	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichlorobenzene	ND	0.000481	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3-Dichlorobenzene	ND	0.000368	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,4-Dichlorobenzene	ND	0.000341	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dichlorodifluoromethane	ND	0.000886	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloroethane	ND	0.000507	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloroethene	ND	0.000362	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichloropropane	ND	0.000463	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3-Dichloropropane	ND	0.000338	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2,2-Dichloropropane	ND	0.000377	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloropropene	ND	0.000397	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Hexachlorobutadiene	ND	0.000438	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Isopropylbenzene	ND	0.000503	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
4-Isopropyltoluene	ND	0.000842	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Methylene chloride	0.000770	0.000536	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
n-Butylbenzene	ND	0.000890	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Hexanone	0.000748	0.000451	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
n-Propylbenzene	ND	0.000406	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
sec-Butylbenzene	0.000781	0.000548	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Styrene	ND	0.000359	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3 (18-20')
Project: SWMU 10
Collection Date: 4/28/2015 4:07:00 PM
Lab ID: 1504C87-006
Matrix: SOIL
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000916	0.0108		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
tert-Butylbenzene	ND	0.000332	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000353	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000477	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Tetrachloroethene (PCE)	ND	0.000430	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
trans-1,2-DCE	ND	0.000351	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
trans-1,3-Dichloropropene	ND	0.000284	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,3-Trichlorobenzene	ND	0.000794	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,4-Trichlorobenzene	ND	0.000813	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,1-Trichloroethane	ND	0.000309	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,2-Trichloroethane	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Trichloroethene (TCE)	ND	0.000431	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Trichlorofluoromethane	ND	0.000438	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,3-Trichloropropane	ND	0.000762	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Vinyl chloride	ND	0.000248	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Surr: 1,2-Dichloroethane-d4	87.0	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: Dibromofluoromethane	92.3	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: Toluene-d8	94.3	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-01

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-001D SWMU 10-1 2-4FT

Project # :

Collected By :
Collection Date : 04/28/15 13:53

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	60.		mV	2580 B-2011	05/06/15	1
pH	7.8	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-01 (PH) - 7.8 at 21.2c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-02

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-002D SWMU 10-1 4-6FT

Project # :

Collected By :
Collection Date : 04/28/15 14:04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	40.		mV	2580 B-2011	05/06/15	1
pH	8.3	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-02 (PH) - 8.3 at 20.7c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-03

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-003D SWMU 10-1 18-20FT

Project # :

Collected By :
Collection Date : 04/28/15 14:14

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	10.		mV	2580 B-2011	05/06/15	1
pH	8.9	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-03 (PH) - 8.9 at 20.8c

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Est. 1970

REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-04

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-004D SWMU 10-3 2-4FT

Project # :

Collected By :
Collection Date : 04/28/15 15:46

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	60.		mV	2580 B-2011	05/06/15	1
pH	7.6	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-04 (PH) - 7.6 at 21.0c

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-05

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-005D SWMU 10-3 6-8FT

Project # :

Collected By :
Collection Date : 04/28/15 15:57

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	100		mV	2580 B-2011	05/07/15	1
pH	7.6	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-05 (PH) - 7.6 at 21.8c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-06

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-006D SWMU 10-3 18-20FT

Project # :

Collected By :
Collection Date : 04/28/15 16:07

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	70.		mV	2580 B-2011	05/07/15	1
pH	9.1	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-06 (PH) - 9.1 at 21.5c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762539

May 14, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG786207	05/03/15 07:48
Chromium,Hexavalent	< 2	mg/kg			WG786350	05/04/15 11:50
Cyanide	< .25	mg/kg			WG786337	05/04/15 15:52

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762539-03	WG786207
Chromium,Hexavalent	mg/kg	110.	110.	0.0	20	L762612-07	WG786350
Cyanide	mg/kg	0.0	0.0	0.0	20	L762539-02	WG786337
Cyanide	mg/kg	0.0	0.0	0.0	20	L762653-05	WG786337
pH	su	7.70	7.70	0.389	1	L762509-58	WG786356
pH	su	8.20	8.20	0.367	1	L762612-03	WG786356
ORP	mV	100.	100.	0.0	20	L762171-02	WG786855
ORP	mV	60.0	60.0	0.0	20	L762539-04	WG786855
ORP	mV	100.	100.	0.0	20	L762539-05	WG787164
ORP	mV	150.	150.	0.0	20	L762970-01	WG787164

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	59.8	67.0	112.	80-120	WG786207
Chromium,Hexavalent	mg/kg	59.8	57.4	96.0	80-120	WG786350
Cyanide	mg/kg	101	108.	107.	50-150	WG786337
pH	su	7.84	7.79	99.4	98.3-101.7	WG786356
ORP	mV	100	108.	108.	90-110	WG786855
ORP	mV	100	105.	105.	90-110	WG787164

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/kg	67.0	67.0	112.	80-120	0.0	20	WG786207
Chromium,Hexavalent	mg/kg	57.2	57.4	96.0	80-120	0.349	20	WG786350

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762539

May 14, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/kg	108.	108.	107.	50-150	0.0	20	WG786337
pH	su	7.79	7.79	99.0	98.3-101.7	0.0	20	WG786356
ORP	mV	108.	108.	108.	90-110	0.0	20	WG786855
ORP	mV	105.	105.	105.	90-110	0.0	20	WG787164

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	21.8	0.0	20	110.	75-125	L762539-03	WG786207
Chromium,Hexavalent	mg/kg	155.	110.	20	110.	75-125	L762612-07	WG786350
Cyanide	mg/kg	3.07	0.0	3.33	92.0	80-120	L762539-06	WG786337

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	22.1	21.8	110.	75-125	1.37	20	L762539-03	WG786207
Chromium,Hexavalent	mg/kg	155.	155.	112.	75-125	0.0	20	L762612-07	WG786350
Cyanide	mg/kg	3.20	3.07	96.1	80-120	4.15	20	L762539-06	WG786337

Batch number /Run number / Sample number cross reference

WG786207: R3034617: L762539-01 02 03
WG786350: R3034796: L762539-04 05 06
WG786337: R3034851: L762539-01 02 03 04 05 06
WG786356: R3035082: L762539-01 02 03 04 05 06
WG786855: R3035486: L762539-01 02 03 04
WG787164: R3035850: L762539-05 06

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18983**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		131	57.9	140			

Sample ID **LCS-18983**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	124	67.8	130			
Surr: DNOP	6.2		5.000		125	57.9	140			

Sample ID **1504C87-001CMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767969** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	120	9.7	48.69	92.77	60.1	42.3	146			
Surr: DNOP	5.2		4.869		107	57.9	140			

Sample ID **1504C87-001CMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767979** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	130	9.7	48.59	92.77	73.6	42.3	146	5.17	28.9	
Surr: DNOP	5.2		4.859		107	57.9	140	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**R25904**	RunNo:	**25904**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768086**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.3	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**R25904**	RunNo:	**25904**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768087**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	64	130			
Surr: BFB	980		1000		98.2	80	120			

Sample ID	**1504C87-001BMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**SWMU 10-1 (2-4')**	Batch ID:	**R25904**	RunNo:	**25904**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768089**	Units:	**mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.25	0	99.3	47.9	144			
Surr: BFB	680		690.0		98.5	80	120			

Sample ID	**1504C87-001BMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**SWMU 10-1 (2-4')**	Batch ID:	**R25904**	RunNo:	**25904**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768090**	Units:	**mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.25	0	97.7	47.9	144	1.62	29.9	
Surr: BFB	680		690.0		99.2	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Sample ID **1504c87-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770977** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.71	0.035	0.6900	0	103	57.8	132			
Toluene	0.65	0.035	0.6900	0	93.6	54.8	139			
Chlorobenzene	0.72	0.035	0.6900	0	104	63.5	134			
1,1-Dichloroethene	0.89	0.035	0.6900	0	128	26.4	145			
Trichloroethene (TCE)	0.66	0.035	0.6900	0	96.3	54.9	125			
Surr: Dibromofluoromethane	0.36		0.3450		104	70	130			
Surr: 1,2-Dichloroethane-d4	0.31		0.3450		90.8	70	130			
Surr: Toluene-d8	0.31		0.3450		90.6	70	130			
Surr: 4-Bromofluorobenzene	0.31		0.3450		89.6	70	130			

Sample ID **1504c87-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770978** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.035	0.6900	0	100	57.8	132	2.81	20	
Toluene	0.65	0.035	0.6900	0	93.6	54.8	139	0.0192	20	
Chlorobenzene	0.68	0.035	0.6900	0	98.0	63.5	134	6.11	20	
1,1-Dichloroethene	0.81	0.035	0.6900	0	117	26.4	145	9.25	20	
Trichloroethene (TCE)	0.60	0.035	0.6900	0	87.6	54.9	125	9.54	20	
Surr: Dibromofluoromethane	0.35		0.3450		102	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.31		0.3450		90.4	70	130	0	0	
Surr: Toluene-d8	0.32		0.3450		91.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.32		0.3450		92.6	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Sample ID **1504C87-001Cms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772523** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.25	2.061	0	72.9	36.3	121			
4-Chloro-3-methylphenol	3.4	0.62	4.110	0	81.7	48.2	119			
2-Chlorophenol	2.8	0.25	4.110	0	68.4	37.2	114			
1,4-Dichlorobenzene	1.3	0.25	2.061	0	65.5	28.8	106			
2,4-Dinitrotoluene	1.4	0.62	2.061	0	66.5	34.6	111			
N-Nitrosodi-n-propylamine	1.7	0.25	2.061	0	80.6	32.7	117			
4-Nitrophenol	3.2	0.31	4.110	0	77.1	30.1	134			
Pentachlorophenol	3.1	0.49	4.110	0.1602	70.7	24	120			
Phenol	3.3	0.25	4.110	0	79.2	38.3	118			
Pyrene	1.6	0.25	2.061	0	79.6	38.3	134			
1,2,4-Trichlorobenzene	1.6	0.25	2.061	0	79.0	31.8	110			
Surr: 2-Fluorophenol	3.2		4.110		77.9	26.4	129			
Surr: Phenol-d5	3.3		4.110		79.4	34.8	118			
Surr: 2,4,6-Tribromophenol	3.9		4.110		95.3	26.8	128			
Surr: Nitrobenzene-d5	1.5		2.061		75.2	35.8	124			
Surr: 2-Fluorobiphenyl	1.6		2.061		75.6	24.5	139			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1504C87-001Cms**	SampType:	**MS**		TestCode:	**EPA Method 8270C: Semivolatiles**				
Client ID:	**SWMU 10-1 (2-4')**	Batch ID:	**19026**		RunNo:	**26053**				
Prep Date:	**5/4/2015**	Analysis Date:	**5/7/2015**		SeqNo:	**772523**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.9		2.061		94.6	29.4	129			

Sample ID	**1504C87-001Cmsd**	SampType:	**MSD**		TestCode:	**EPA Method 8270C: Semivolatiles**				
Client ID:	**SWMU 10-1 (2-4')**	Batch ID:	**19026**		RunNo:	**26053**				
Prep Date:	**5/4/2015**	Analysis Date:	**5/7/2015**		SeqNo:	**772524**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.25	2.067	0	69.4	36.3	121	4.64	25.4	
4-Chloro-3-methylphenol	3.3	0.62	4.122	0	80.2	48.2	119	1.57	30.4	
2-Chlorophenol	2.6	0.25	4.122	0	63.2	37.2	114	7.60	33.4	
1,4-Dichlorobenzene	1.3	0.25	2.067	0	62.8	28.8	106	3.81	20.9	
2,4-Dinitrotoluene	1.3	0.62	2.067	0	62.8	34.6	111	5.41	27.9	
N-Nitrosodi-n-propylamine	1.5	0.25	2.067	0	72.4	32.7	117	10.5	27.5	
4-Nitrophenol	3.2	0.31	4.122	0	76.9	30.1	134	0.104	33.7	
Pentachlorophenol	3.1	0.50	4.122	0.1602	71.0	24	120	0.688	39.7	
Phenol	3.0	0.25	4.122	0	72.4	38.3	118	8.63	30.1	
Pyrene	1.5	0.25	2.067	0	72.0	38.3	134	9.71	22.7	
1,2,4-Trichlorobenzene	1.5	0.25	2.067	0	74.1	31.8	110	6.12	27.8	
Surr: 2-Fluorophenol	2.8		4.122		68.8	26.4	129	0	0	
Surr: Phenol-d5	3.0		4.122		73.5	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	4.0		4.122		97.8	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.5		2.067		72.1	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.5		2.067		71.2	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.8		2.067		85.2	29.4	129	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19078**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID:	**19078**	RunNo:	**26010**				
Prep Date:	**5/6/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771069**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19078**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID:	**19078**	RunNo:	**26010**				
Prep Date:	**5/6/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771070**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19080**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772227** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID **LCS-19080**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1504C87** RcptNo: **1**

Received by/date: 04/29/15

Logged By: **Ashley Gallegos** **4/29/2015 4:00:00 PM**

Completed By: **Ashley Gallegos** **4/30/2015 11:48:30 AM**

Reviewed By: 04/30/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 2.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504C87	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4/28/15	1353	SOIL	SWMU 10-1(2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1404	SOIL	SWMU 10-1(4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1414	SOIL	SWMU 10-1(18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	7:22			4/29/15	7:20
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	1600			04/29/15	1600

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504C87
4-28-15	1546	SOIL	SWMU 10-3 (2-4')	JARS-2	NEAT	-004
				VIALS-2	MeOH	
				VIALS-2	SOBI	
	1557	SOIL	SWMU 10-3 (6-8')	JARS-2	NEAT	-005
				VIALS-2	MeOH	
				VIALS-2	SOBI	
	1607	SOIL	SWMU 10-3 (18-20')	JARS-2	NEAT	-006
				VIALS-2	MeOH	
				VIALS-2	SOBI	

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	0723			4/29/15	720
Date:	Time:	Relinquished by:	Received by:	Date	Time
				04/29/15	1600

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 19, 2016

Ed Riege

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1609B57

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 12 sample(s) on 9/20/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 06, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 11:40:00 AM
Lab ID: 1609B57-001 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	2.1	11		mg/Kg-dr	1	9/27/2016 12:55:29 PM	27685
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	9/27/2016 12:55:29 PM	27685
Surr: DNOP	76.0	0	70-130		%Rec	1	9/27/2016 12:55:29 PM	27685
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0072	0.00063	0.037	J	mg/Kg-dr	1	9/27/2016 10:33:45 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	2.2	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Arsenic	ND	2.0	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Barium	220	0.16	0.22		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Beryllium	1.1	0.076	0.33		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Cadmium	ND	0.14	0.22		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Chromium	14	0.21	0.66		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Cobalt	6.8	0.25	0.66		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Iron	19000	83	280		mg/Kg-dr	100	9/28/2016 10:24:34 PM	27709
Lead	2.6	0.38	0.55		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Manganese	450	0.12	0.22		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Nickel	12	0.33	1.1		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Selenium	ND	4.0	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Silver	ND	0.14	0.55		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Vanadium	23	0.39	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Zinc	21	0.77	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.095	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Acenaphthylene	ND	0.090	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Aniline	ND	0.10	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Anthracene	ND	0.074	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benz(a)anthracene	ND	0.095	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(a)pyrene	ND	0.084	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(g,h,i)perylene	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(k)fluoranthene	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzoic acid	ND	0.092	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzyl alcohol	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 11:40:00 AM
Lab ID: 1609B57-001 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.081	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.099	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Bis(2-ethylhexyl)phthalate	0.15	0.090	0.55	J	mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Butyl benzyl phthalate	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Carbazole	ND	0.075	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Chloro-3-methylphenol	ND	0.13	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Chloroaniline	ND	0.12	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Chloronaphthalene	ND	0.087	0.28		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Chlorophenol	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Chrysene	ND	0.094	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Di-n-butyl phthalate	0.22	0.083	0.44	J	mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Di-n-octyl phthalate	ND	0.095	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Dibenz(a,h)anthracene	ND	0.090	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,2-Dichlorobenzene	ND	0.085	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,3-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,4-Dichlorobenzene	ND	0.094	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
3,3´-Dichlorobenzidine	ND	0.082	0.28		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Diethyl phthalate	0.22	0.11	0.22	J	mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dichlorophenol	ND	0.10	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dimethylphenol	ND	0.12	0.33		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.067	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dinitrophenol	ND	0.074	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Fluoranthene	ND	0.064	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachlorobenzene	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachlorobutadiene	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachloroethane	ND	0.095	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Methylphenol	ND	0.093	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 11:40:00 AM
Lab ID: 1609B57-001 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.080	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
3-Nitroaniline	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Nitroaniline	ND	0.078	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Nitrophenol	ND	0.084	0.28		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Pentachlorophenol	ND	0.071	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Phenanthrene	ND	0.075	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Phenol	ND	0.084	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Pyrene	ND	0.084	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Pyridine	ND	0.088	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4,6-Trichlorophenol	ND	0.092	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Surr: 2-Fluorophenol	91.7	0	35-97.9		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: Phenol-d5	91.3	0	37.3-105		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: 2,4,6-Tribromophenol	91.3	0	35.6-118		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: Nitrobenzene-d5	78.3		41.2-107		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: 2-Fluorobiphenyl	80.2		41.9-119		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: 4-Terphenyl-d14	64.0		15-132		%Rec	1	9/28/2016 5:43:44 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Toluene	1.17	0.246	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Ethylbenzene	0.407	0.274	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.342	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,4-Trimethylbenzene	0.428	0.345	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,3,5-Trimethylbenzene	0.356	0.336	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dichloroethane (EDC)	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dibromoethane (EDB)	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Naphthalene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1-Methylnaphthalene	ND	0.231	4.07		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Methylnaphthalene	ND	0.536	4.07		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Acetone	7.10	0.603	10.2	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Bromobenzene	ND	0.207	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Bromodichloromethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 11:40:00 AM
Lab ID: 1609B57-001 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromoform	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Bromomethane	ND	0.367	3.05		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Butanone	ND	0.734	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Carbon disulfide	ND	0.753	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Carbon tetrachloride	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chlorobenzene	ND	0.234	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chloroethane	ND	0.376	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chloroform	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chloromethane	ND	0.516	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Chlorotoluene	ND	0.346	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
4-Chlorotoluene	ND	0.339	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
cis-1,2-DCE	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
cis-1,3-Dichloropropene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.217	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Dibromochloromethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Dibromomethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dichlorobenzene	ND	0.297	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,3-Dichlorobenzene	ND	0.376	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,4-Dichlorobenzene	ND	0.381	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Dichlorodifluoromethane	ND	1.19	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1-Dichloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1-Dichloroethene	ND	0.333	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dichloropropane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,3-Dichloropropane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2,2-Dichloropropane	ND	0.257	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1-Dichloropropene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Hexachlorobutadiene	ND	0.464	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Hexanone	ND	0.507	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Isopropylbenzene	0.275	0.256	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
4-Isopropyltoluene	ND	0.382	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
4-Methyl-2-pentanone	ND	4.07	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Methylene chloride	ND	2.04	3.05		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
n-Butylbenzene	ND	0.496	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
n-Propylbenzene	0.377	0.365	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
sec-Butylbenzene	ND	0.362	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Styrene	ND	0.260	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
tert-Butylbenzene	ND	0.298	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 11:40:00 AM
Lab ID: 1609B57-001
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Tetrachloroethene (PCE)	ND	0.268	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
trans-1,2-DCE	ND	0.206	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
trans-1,3-Dichloropropene	ND	0.246	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.493	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.618	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,1-Trichloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,2-Trichloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Trichloroethene (TCE)	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Trichlorofluoromethane	ND	0.256	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,3-Trichloropropane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Vinyl chloride	ND	0.536	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Xylenes, Total	1.42	0.812	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Surr: 1,2-Dichloroethane-d4	121	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
Surr: Toluene-d8	97.8	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.55	3.6		mg/Kg-dr	1	9/23/2016 11:19:22 AM	R37464
Surr: BFB	104	0	70-130		%Rec	1	9/23/2016 11:19:22 AM	R37464

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 11:55:00 AM
Lab ID: 1609B57-002 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	2.0	11		mg/Kg-dr	1	9/23/2016 10:17:59 AM	27652
Motor Oil Range Organics (MRO)	ND	55	55		mg/Kg-dr	1	9/23/2016 10:17:59 AM	27652
Surr: DNOP	73.9	0	70-130		%Rec	1	9/23/2016 10:17:59 AM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0026	0.00065	0.038	J	mg/Kg-dr	1	9/27/2016 10:39:03 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.1	2.8		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Arsenic	1.0	1.0	2.8	J	mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Barium	730	0.41	0.57		mg/Kg-dr	5	9/28/2016 10:27:48 PM	27709
Beryllium	0.82	0.039	0.17		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Cadmium	ND	0.072	0.11		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Chromium	13	0.11	0.34		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Cobalt	8.0	0.13	0.34		mg/Kg-dr	1	9/28/2016 10:26:03 PM	27709
Iron	19000	86	280		mg/Kg-dr	100	9/28/2016 10:38:43 PM	27709
Lead	0.95	0.20	0.28		mg/Kg-dr	1	9/28/2016 10:26:03 PM	27709
Manganese	850	0.30	0.57		mg/Kg-dr	5	9/28/2016 10:27:48 PM	27709
Nickel	13	0.17	0.57		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Selenium	ND	2.1	2.8		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Silver	ND	0.071	0.28		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Vanadium	13	0.20	2.8		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Zinc	25	0.40	2.8		mg/Kg-dr	1	9/28/2016 10:26:03 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Aniline	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Anthracene	ND	0.075	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(a)pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzoic acid	ND	0.094	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzyl alcohol	ND	0.089	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 11:55:00 AM
Lab ID: 1609B57-002 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Bis(2-ethylhexyl)phthalate	0.17	0.093	0.57	J	mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Chloronaphthalene	ND	0.090	0.28		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Di-n-butyl phthalate	0.25	0.085	0.46	J	mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Di-n-octyl phthalate	ND	0.097	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Dibenz(a,h)anthracene	ND	0.092	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,2-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,4-Dichlorobenzene	ND	0.096	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
3,3´-Dichlorobenzidine	ND	0.084	0.28		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Diethyl phthalate	0.22	0.12	0.23	J	mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dinitrophenol	ND	0.075	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Isophorone	ND	0.13	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Methylnaphthalene	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Methylphenol	ND	0.095	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 11:55:00 AM
Lab ID: 1609B57-002 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Nitroaniline	ND	0.080	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Nitrophenol	ND	0.087	0.28		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Pentachlorophenol	ND	0.073	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Phenanthrene	ND	0.077	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Phenol	ND	0.086	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Pyridine	ND	0.090	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4,6-Trichlorophenol	ND	0.094	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Surr: 2-Fluorophenol	87.6	0	35-97.9		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: Phenol-d5	85.9	0	37.3-105		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: 2,4,6-Tribromophenol	97.2	0	35.6-118		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: Nitrobenzene-d5	81.5		41.2-107		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: 2-Fluorobiphenyl	83.2		41.9-119		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: 4-Terphenyl-d14	70.3		15-132		%Rec	1	9/28/2016 6:11:39 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	10.3	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Toluene	7.43	0.258	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Ethylbenzene	1.84	0.286	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.358	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,4-Trimethylbenzene	1.61	0.361	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,3,5-Trimethylbenzene	1.11	0.352	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dichloroethane (EDC)	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dibromoethane (EDB)	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Naphthalene	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1-Methylnaphthalene	0.448	0.242	4.26	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Methylnaphthalene	0.575	0.561	4.26	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Acetone	4.45	0.631	10.7	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Bromobenzene	ND	0.217	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Bromodichloromethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 11:55:00 AM
Lab ID: 1609B57-002
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromoform	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Bromomethane	ND	0.384	3.20		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Butanone	ND	0.768	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Carbon disulfide	ND	0.788	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Carbon tetrachloride	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chlorobenzene	ND	0.244	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chloroethane	ND	0.393	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chloroform	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chloromethane	ND	0.540	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Chlorotoluene	ND	0.363	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
4-Chlorotoluene	ND	0.354	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
cis-1,2-DCE	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
cis-1,3-Dichloropropene	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.227	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Dibromochloromethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Dibromomethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dichlorobenzene	ND	0.310	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,3-Dichlorobenzene	ND	0.394	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,4-Dichlorobenzene	ND	0.399	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Dichlorodifluoromethane	ND	1.24	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1-Dichloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1-Dichloroethene	ND	0.349	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dichloropropane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,3-Dichloropropane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2,2-Dichloropropane	ND	0.269	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1-Dichloropropene	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Hexachlorobutadiene	ND	0.486	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Hexanone	ND	0.531	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Isopropylbenzene	0.458	0.268	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
4-Isopropyltoluene	ND	0.400	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
4-Methyl-2-pentanone	ND	4.26	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Methylene chloride	ND	2.13	3.20		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
n-Butylbenzene	ND	0.519	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
n-Propylbenzene	0.618	0.382	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
sec-Butylbenzene	ND	0.378	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Styrene	ND	0.272	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
tert-Butylbenzene	ND	0.311	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-23 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 11:55:00 AM
Lab ID: 1609B57-002
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Tetrachloroethene (PCE)	ND	0.280	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
trans-1,2-DCE	ND	0.215	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
trans-1,3-Dichloropropene	ND	0.258	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.516	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.646	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,1-Trichloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,2-Trichloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Trichloroethene (TCE)	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Trichlorofluoromethane	ND	0.268	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,3-Trichloropropane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Vinyl chloride	ND	0.561	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Xylenes, Total	5.54	0.850	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Surr: 1,2-Dichloroethane-d4	122	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.51	3.4		mg/Kg-dr	1	9/23/2016 11:48:12 AM	R37464
Surr: BFB	105	0	70-130		%Rec	1	9/23/2016 11:48:12 AM	R37464

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 12:55:00 PM
Lab ID: 1609B57-003 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	1.8	10		mg/Kg-dr	1	9/23/2016 11:01:26 AM	27652
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	9/23/2016 11:01:26 AM	27652
Surr: DNOP	83.0	0	70-130		%Rec	1	9/23/2016 11:01:26 AM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	2.6	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0041	0.00059	0.034	J	mg/Kg-dr	1	9/27/2016 10:40:50 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	1.1	1.0	2.6	J	mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Arsenic	ND	0.91	2.6		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Barium	190	0.073	0.10		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Beryllium	0.60	0.035	0.15		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Cadmium	ND	0.065	0.10		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Chromium	6.3	0.096	0.31		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Cobalt	3.6	0.11	0.31		mg/Kg-dr	1	9/28/2016 10:40:13 PM	27709
Iron	11000	39	130		mg/Kg-dr	50	9/28/2016 10:41:58 PM	27709
Lead	2.3	0.18	0.26		mg/Kg-dr	1	9/28/2016 10:40:13 PM	27709
Manganese	370	0.11	0.20		mg/Kg-dr	2	9/28/2016 5:28:54 PM	27709
Nickel	5.7	0.15	0.51		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Selenium	ND	1.9	2.6		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Silver	ND	0.064	0.26		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Vanadium	12	0.18	2.6		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Zinc	11	0.36	2.6		mg/Kg-dr	1	9/28/2016 10:40:13 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.087	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Acenaphthylene	ND	0.083	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Aniline	ND	0.096	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Anthracene	ND	0.067	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Azobenzene	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benz(a)anthracene	ND	0.087	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(a)pyrene	ND	0.077	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(b)fluoranthene	ND	0.092	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(g,h,i)perylene	ND	0.090	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(k)fluoranthene	ND	0.089	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzoic acid	ND	0.084	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzyl alcohol	ND	0.079	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Bis(2-chloroethoxy)methane	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 12:55:00 PM
Lab ID: 1609B57-003
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.075	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.091	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Bis(2-ethylhexyl)phthalate	0.16	0.083	0.51	J	mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Bromophenyl phenyl ether	ND	0.097	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Butyl benzyl phthalate	ND	0.090	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Carbazole	ND	0.069	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Chloro-3-methylphenol	ND	0.12	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Chloroaniline	ND	0.11	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Chloronaphthalene	ND	0.080	0.25		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Chlorophenol	ND	0.080	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Chlorophenyl phenyl ether	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Chrysene	ND	0.086	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Di-n-butyl phthalate	0.22	0.076	0.41	J	mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Di-n-octyl phthalate	ND	0.087	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Dibenz(a,h)anthracene	ND	0.082	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Dibenzofuran	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,2-Dichlorobenzene	ND	0.078	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,3-Dichlorobenzene	ND	0.078	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,4-Dichlorobenzene	ND	0.086	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
3,3´-Dichlorobenzidine	ND	0.075	0.25		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Diethyl phthalate	0.20	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Dimethyl phthalate	ND	0.099	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dichlorophenol	ND	0.095	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dimethylphenol	ND	0.11	0.30		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.061	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dinitrophenol	ND	0.067	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dinitrotoluene	ND	0.091	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,6-Dinitrotoluene	ND	0.11	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Fluoranthene	ND	0.058	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Fluorene	ND	0.093	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachlorobenzene	ND	0.080	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachlorobutadiene	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachlorocyclopentadiene	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachloroethane	ND	0.087	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.079	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Isophorone	ND	0.11	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1-Methylnaphthalene	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Methylnaphthalene	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Methylphenol	ND	0.085	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 12:55:00 PM
Lab ID: 1609B57-003
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.074	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
N-Nitrosodi-n-propylamine	ND	0.098	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
N-Nitrosodiphenylamine	ND	0.099	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Naphthalene	ND	0.097	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Nitroaniline	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
3-Nitroaniline	ND	0.090	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Nitroaniline	ND	0.072	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Nitrobenzene	ND	0.10	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Nitrophenol	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Nitrophenol	ND	0.077	0.25		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Pentachlorophenol	ND	0.065	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Phenanthrene	ND	0.069	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Phenol	ND	0.076	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Pyrene	ND	0.077	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Pyridine	ND	0.080	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,2,4-Trichlorobenzene	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4,5-Trichlorophenol	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4,6-Trichlorophenol	ND	0.084	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Surr: 2-Fluorophenol	74.8	0	35-97.9		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: Phenol-d5	81.1	0	37.3-105		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: 2,4,6-Tribromophenol	87.7	0	35.6-118		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: Nitrobenzene-d5	66.4		41.2-107		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: 2-Fluorobiphenyl	75.2		41.9-119		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: 4-Terphenyl-d14	64.0		15-132		%Rec	1	9/28/2016 6:39:40 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Toluene	1.39	0.205	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Ethylbenzene	0.442	0.228	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.286	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,4-Trimethylbenzene	0.442	0.288	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,3,5-Trimethylbenzene	0.306	0.281	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dichloroethane (EDC)	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dibromoethane (EDB)	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Naphthalene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1-Methylnaphthalene	ND	0.193	3.40		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Methylnaphthalene	ND	0.448	3.40		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Acetone	19.2	0.503	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Bromobenzene	ND	0.173	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Bromodichloromethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 12:55:00 PM
Lab ID: 1609B57-003
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromoform	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Bromomethane	0.544	0.306	2.55	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Butanone	ND	0.613	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Carbon disulfide	ND	0.629	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Carbon tetrachloride	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chlorobenzene	ND	0.195	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chloroethane	ND	0.314	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chloroform	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chloromethane	ND	0.431	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Chlorotoluene	ND	0.289	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
4-Chlorotoluene	ND	0.283	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
cis-1,2-DCE	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
cis-1,3-Dichloropropene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.181	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Dibromochloromethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Dibromomethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dichlorobenzene	ND	0.248	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,3-Dichlorobenzene	ND	0.314	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,4-Dichlorobenzene	ND	0.318	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Dichlorodifluoromethane	ND	0.993	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1-Dichloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1-Dichloroethene	ND	0.278	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dichloropropane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,3-Dichloropropane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2,2-Dichloropropane	ND	0.215	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1-Dichloropropene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Hexachlorobutadiene	ND	0.388	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Hexanone	ND	0.423	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Isopropylbenzene	0.238	0.214	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
4-Isopropyltoluene	ND	0.319	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
4-Methyl-2-pentanone	ND	3.40	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Methylene chloride	ND	1.70	2.55		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
n-Butylbenzene	ND	0.414	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
n-Propylbenzene	0.332	0.304	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
sec-Butylbenzene	ND	0.302	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Styrene	ND	0.217	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
tert-Butylbenzene	ND	0.248	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 12:55:00 PM
Lab ID: 1609B57-003
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Tetrachloroethene (PCE)	ND	0.223	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
trans-1,2-DCE	ND	0.172	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
trans-1,3-Dichloropropene	ND	0.206	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.411	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.516	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,1-Trichloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,2-Trichloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Trichloroethene (TCE)	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Trichlorofluoromethane	ND	0.214	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,3-Trichloropropane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Vinyl chloride	ND	0.447	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Xylenes, Total	1.31	0.678	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Surr: 1,2-Dichloroethane-d4	122	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
Surr: Toluene-d8	98.2	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.47	3.1		mg/Kg-dr	1	9/23/2016 12:16:59 PM	R37464
Surr: BFB	102	0	70-130		%Rec	1	9/23/2016 12:16:59 PM	R37464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (6-8')
Project: SWMU 10
Collection Date: 9/19/2016 1:10:00 PM
Lab ID: 1609B57-004 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	650	2.3	12		mg/Kg-dr	1	9/23/2016 11:23:07 AM	27652
Motor Oil Range Organics (MRO)	69	62	62		mg/Kg-dr	1	9/23/2016 11:23:07 AM	27652
Surr: DNOP	98.5	0	70-130		%Rec	1	9/23/2016 11:23:07 AM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	20	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0023	0.00072	0.042	J	mg/Kg-dr	1	9/27/2016 10:42:38 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Arsenic	ND	1.1	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Barium	120	0.087	0.12		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Beryllium	0.99	0.042	0.18		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Cadmium	ND	0.078	0.12		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Chromium	12	0.12	0.37		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Cobalt	5.5	0.14	0.37		mg/Kg-dr	1	9/28/2016 10:43:29 PM	27709
Iron	18000	93	310		mg/Kg-dr	100	9/28/2016 10:45:22 PM	27709
Lead	3.9	0.21	0.31		mg/Kg-dr	1	9/28/2016 10:43:29 PM	27709
Manganese	200	0.066	0.12		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Nickel	9.9	0.19	0.61		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Selenium	ND	2.2	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Silver	ND	0.077	0.31		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Vanadium	19	0.22	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Zinc	18	0.43	3.1		mg/Kg-dr	1	9/28/2016 10:43:29 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Acenaphthylene	ND	1.0	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Aniline	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Anthracene	ND	0.83	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Azobenzene	ND	1.5	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benz(a)anthracene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(a)pyrene	ND	0.94	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(b)fluoranthene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(g,h,i)perylene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(k)fluoranthene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzoic acid	1.6	1.0	6.2	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzyl alcohol	ND	0.97	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Bis(2-chloroethoxy)methane	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (6-8')
Project: SWMU 10
Collection Date: 9/19/2016 1:10:00 PM
Lab ID: 1609B57-004 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.91	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Bis(2-chloroisopropyl)ether	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Bis(2-ethylhexyl)phthalate	ND	1.0	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Bromophenyl phenyl ether	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Butyl benzyl phthalate	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Carbazole	ND	0.84	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Chloro-3-methylphenol	ND	1.5	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Chloroaniline	ND	1.4	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Chloronaphthalene	ND	0.98	3.1	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Chlorophenol	ND	0.98	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Chlorophenyl phenyl ether	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Chrysene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Di-n-butyl phthalate	ND	0.93	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Di-n-octyl phthalate	ND	1.1	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Dibenz(a,h)anthracene	ND	1.0	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Dibenzofuran	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,2-Dichlorobenzene	ND	0.95	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,3-Dichlorobenzene	ND	0.96	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,4-Dichlorobenzene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
3,3´-Dichlorobenzidine	ND	0.92	3.1	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Diethyl phthalate	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Dimethyl phthalate	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dichlorophenol	ND	1.2	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dimethylphenol	1.5	1.4	3.7	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.75	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dinitrophenol	ND	0.83	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dinitrotoluene	ND	1.1	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,6-Dinitrotoluene	ND	1.3	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Fluoranthene	ND	0.72	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Fluorene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachlorobenzene	ND	0.98	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachlorobutadiene	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachlorocyclopentadiene	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachloroethane	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.97	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Isophorone	ND	1.4	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1-Methylnaphthalene	5.0	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Methylnaphthalene	8.5	1.5	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Methylphenol	4.7	1.0	5.0	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (6-8')
Project: SWMU 10
Collection Date: 9/19/2016 1:10:00 PM
Lab ID: 1609B57-004
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.90	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
N-Nitrosodi-n-propylamine	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
N-Nitrosodiphenylamine	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Naphthalene	1.9	1.2	2.5	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Nitroaniline	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
3-Nitroaniline	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Nitroaniline	ND	0.88	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Nitrobenzene	ND	1.3	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Nitrophenol	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Nitrophenol	ND	0.95	3.1	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Pentachlorophenol	ND	0.80	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Phenanthrene	1.4	0.85	2.5	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Phenol	ND	0.94	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Pyrene	ND	0.94	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Pyridine	ND	0.99	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,2,4-Trichlorobenzene	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4,5-Trichlorophenol	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4,6-Trichlorophenol	ND	1.0	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Surr: 2-Fluorophenol	0	0	35-97.9	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: Phenol-d5	0	0	37.3-105	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: 2,4,6-Tribromophenol	0	0	35.6-118	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: Nitrobenzene-d5	0		41.2-107	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: 2-Fluorobiphenyl	0		41.9-119	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: 4-Terphenyl-d14	0		15-132	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	ND	0.29	0.36		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Toluene	0.25	0.043	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Ethylbenzene	0.69	0.060	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Methyl tert-butyl ether (MTBE)	ND	0.23	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,4-Trimethylbenzene	5.3	0.054	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,3,5-Trimethylbenzene	1.9	0.053	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dichloroethane (EDC)	ND	0.19	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dibromoethane (EDB)	ND	0.052	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Naphthalene	3.7	0.11	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1-Methylnaphthalene	8.1	0.16	2.9		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Methylnaphthalene	14	0.16	2.9		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Acetone	ND	0.94	11		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Bromobenzene	ND	0.059	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Bromodichloromethane	ND	0.042	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (6-8')
Project: SWMU 10
Collection Date: 9/19/2016 1:10:00 PM
Lab ID: 1609B57-004 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Bromoform	ND	0.089	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Bromomethane	0.32	0.27	2.2	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Butanone	ND	0.42	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Carbon disulfide	ND	0.24	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Carbon tetrachloride	ND	0.048	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chlorobenzene	ND	0.059	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chloroethane	ND	0.15	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chloroform	ND	0.055	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chloromethane	ND	0.065	2.2		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Chlorotoluene	ND	0.054	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
4-Chlorotoluene	ND	0.064	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
cis-1,2-DCE	ND	0.042	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
cis-1,3-Dichloropropene	ND	0.067	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dibromo-3-chloropropane	ND	0.22	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Dibromochloromethane	ND	0.066	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Dibromomethane	ND	0.063	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dichlorobenzene	ND	0.064	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,3-Dichlorobenzene	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,4-Dichlorobenzene	ND	0.090	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Dichlorodifluoromethane	ND	0.23	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1-Dichloroethane	ND	0.039	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1-Dichloroethene	ND	0.24	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dichloropropane	ND	0.061	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,3-Dichloropropane	ND	0.083	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2,2-Dichloropropane	ND	0.042	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1-Dichloropropene	ND	0.058	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Hexachlorobutadiene	ND	0.089	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Hexanone	ND	0.40	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Isopropylbenzene	0.24	0.063	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
4-Isopropyltoluene	0.38	0.065	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
4-Methyl-2-pentanone	ND	0.21	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Methylene chloride	ND	0.21	2.2		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
n-Butylbenzene	0.50	0.065	2.2	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
n-Propylbenzene	0.39	0.056	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
sec-Butylbenzene	0.34	0.10	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Styrene	ND	0.065	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
tert-Butylbenzene	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,1,2-Tetrachloroethane	ND	0.070	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,2,2-Tetrachloroethane	ND	0.12	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (6-8')
Project: SWMU 10
Collection Date: 9/19/2016 1:10:00 PM
Lab ID: 1609B57-004
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Tetrachloroethene (PCE)	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
trans-1,2-DCE	ND	0.20	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
trans-1,3-Dichloropropene	ND	0.11	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,3-Trichlorobenzene	ND	0.11	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,4-Trichlorobenzene	ND	0.078	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,1-Trichloroethane	ND	0.045	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,2-Trichloroethane	ND	0.086	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Trichloroethene (TCE)	ND	0.078	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Trichlorofluoromethane	ND	0.055	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,3-Trichloropropane	ND	0.13	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Vinyl chloride	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Xylenes, Total	12	0.14	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Surr: Dibromofluoromethane	93.9		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
Surr: 1,2-Dichloroethane-d4	99.0		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
Surr: Toluene-d8	94.8		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
Surr: 4-Bromofluorobenzene	85.0		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	360	11	73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	R37464
Surr: BFB	103	0	70-130		%Rec	20	9/23/2016 4:36:05 PM	R37464

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (8-10')
Project: SWMU 10
Collection Date: 9/19/2016 1:25:00 PM
Lab ID: 1609B57-005 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	190	2.2	12		mg/Kg-dr	1	9/23/2016 11:44:45 AM	27652
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	9/23/2016 11:44:45 AM	27652
Surr: DNOP	96.6	0	70-130		%Rec	1	9/23/2016 11:44:45 AM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0028	0.00066	0.038	J	mg/Kg-dr	1	9/27/2016 10:44:25 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	2.4	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Arsenic	ND	2.1	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Barium	130	0.17	0.24		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Beryllium	1.3	0.083	0.36		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Cadmium	ND	0.15	0.24		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Chromium	15	0.23	0.72		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Cobalt	6.7	0.27	0.72		mg/Kg-dr	2	9/28/2016 10:46:52 PM	27709
Iron	20000	90	300		mg/Kg-dr	100	9/28/2016 10:48:45 PM	27709
Lead	1.5	0.42	0.60		mg/Kg-dr	2	9/28/2016 10:46:52 PM	27709
Manganese	290	0.13	0.24		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Nickel	12	0.36	1.2		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Selenium	ND	4.4	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Silver	ND	0.15	0.60		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Vanadium	23	0.42	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Zinc	22	0.83	6.0		mg/Kg-dr	2	9/28/2016 10:46:52 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Acenaphthylene	ND	0.096	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Aniline	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Anthracene	ND	0.078	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Azobenzene	ND	0.14	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(a)pyrene	ND	0.089	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzoic acid	0.23	0.098	0.59	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzyl alcohol	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (8-10')
Project: SWMU 10
Collection Date: 9/19/2016 1:25:00 PM
Lab ID: 1609B57-005
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.087	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Bis(2-ethylhexyl)phthalate	0.23	0.096	0.59	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Butyl benzyl phthalate	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Carbazole	ND	0.080	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Chloroaniline	ND	0.13	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Chloronaphthalene	ND	0.093	0.30		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Chlorophenol	ND	0.093	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Di-n-butyl phthalate	0.28	0.088	0.47	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Di-n-octyl phthalate	ND	0.10	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Dibenz(a,h)anthracene	ND	0.095	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,2-Dichlorobenzene	ND	0.090	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,3-Dichlorobenzene	ND	0.091	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
3,3´-Dichlorobenzidine	ND	0.087	0.30		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Diethyl phthalate	0.23	0.12	0.24	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dichlorophenol	ND	0.11	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dimethylphenol	0.46	0.13	0.35		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.071	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dinitrophenol	ND	0.078	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Fluoranthene	ND	0.068	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Fluorene	0.16	0.11	0.24	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1-Methylnaphthalene	1.1	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Methylnaphthalene	1.9	0.14	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Methylphenol	2.7	0.099	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (8-10')
Project: SWMU 10
Collection Date: 9/19/2016 1:25:00 PM
Lab ID: 1609B57-005
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	3.0	0.085	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Naphthalene	0.39	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
3-Nitroaniline	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Nitroaniline	ND	0.083	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Nitrophenol	ND	0.090	0.30		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Pentachlorophenol	ND	0.076	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Phenanthrene	0.32	0.080	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Phenol	1.4	0.089	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Pyrene	ND	0.089	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Pyridine	ND	0.094	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4,6-Trichlorophenol	ND	0.098	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Surr: 2-Fluorophenol	90.2	0	35-97.9		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: Phenol-d5	91.9	0	37.3-105		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: 2,4,6-Tribromophenol	89.0	0	35.6-118		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: Nitrobenzene-d5	76.5		41.2-107		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: 2-Fluorobiphenyl	79.2		41.9-119		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: 4-Terphenyl-d14	67.5		15-132		%Rec	1	9/29/2016 4:04:08 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	0.26	0.13	0.17		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Toluene	0.49	0.020	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Ethylbenzene	0.41	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Methyl tert-butyl ether (MTBE)	ND	0.10	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,4-Trimethylbenzene	1.2	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,3,5-Trimethylbenzene	0.43	0.024	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dichloroethane (EDC)	ND	0.087	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dibromoethane (EDB)	ND	0.024	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Naphthalene	0.85	0.052	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1-Methylnaphthalene	1.6	0.074	1.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Methylnaphthalene	2.8	0.071	1.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Acetone	ND	0.43	5.0		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Bromobenzene	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Bromodichloromethane	ND	0.019	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (8-10')
Project: SWMU 10
Collection Date: 9/19/2016 1:25:00 PM
Lab ID: 1609B57-005 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Bromoform	ND	0.041	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Bromomethane	0.15	0.12	1.0	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Butanone	ND	0.19	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Carbon disulfide	ND	0.11	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Carbon tetrachloride	ND	0.022	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chlorobenzene	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chloroethane	ND	0.067	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chloroform	ND	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chloromethane	ND	0.030	1.0		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Chlorotoluene	ND	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
4-Chlorotoluene	ND	0.030	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
cis-1,2-DCE	ND	0.019	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
cis-1,3-Dichloropropene	ND	0.031	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dibromo-3-chloropropane	ND	0.10	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Dibromochloromethane	ND	0.030	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Dibromomethane	ND	0.029	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dichlorobenzene	ND	0.029	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,3-Dichlorobenzene	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,4-Dichlorobenzene	ND	0.041	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Dichlorodifluoromethane	ND	0.10	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1-Dichloroethane	ND	0.018	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1-Dichloroethene	ND	0.11	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dichloropropane	ND	0.028	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,3-Dichloropropane	ND	0.038	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2,2-Dichloropropane	ND	0.019	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1-Dichloropropene	ND	0.026	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Hexachlorobutadiene	ND	0.041	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Hexanone	ND	0.18	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Isopropylbenzene	0.14	0.029	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
4-Isopropyltoluene	0.11	0.030	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
4-Methyl-2-pentanone	ND	0.097	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Methylene chloride	ND	0.096	1.0		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
n-Butylbenzene	0.18	0.030	1.0	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
n-Propylbenzene	0.24	0.026	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
sec-Butylbenzene	0.14	0.046	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Styrene	ND	0.030	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
tert-Butylbenzene	ND	0.028	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,1,2-Tetrachloroethane	ND	0.032	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,2,2-Tetrachloroethane	ND	0.054	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (8-10')
Project: SWMU 10
Collection Date: 9/19/2016 1:25:00 PM
Lab ID: 1609B57-005
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Tetrachloroethene (PCE)	ND	0.028	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
trans-1,2-DCE	ND	0.093	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
trans-1,3-Dichloropropene	ND	0.049	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,3-Trichlorobenzene	ND	0.050	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,4-Trichlorobenzene	ND	0.036	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,1-Trichloroethane	ND	0.020	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,2-Trichloroethane	ND	0.039	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Trichloroethene (TCE)	ND	0.036	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Trichlorofluoromethane	ND	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,3-Trichloropropane	ND	0.058	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Vinyl chloride	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Xylenes, Total	3.4	0.063	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Surr: Dibromofluoromethane	99.5		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
Surr: 1,2-Dichloroethane-d4	102		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
Surr: Toluene-d8	94.9		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
Surr: 4-Bromofluorobenzene	86.7		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	110	5.0	33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	R37464
Surr: BFB	100	0	70-130		%Rec	10	9/23/2016 5:04:54 PM	R37464

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 1:40:00 PM
Lab ID: 1609B57-006 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	2.9	2.0	11	J	mg/Kg-dr	1	9/23/2016 12:06:21 PM	27652
Motor Oil Range Organics (MRO)	ND	53	53		mg/Kg-dr	1	9/23/2016 12:06:21 PM	27652
Surr: DNOP	82.4	0	70-130		%Rec	1	9/23/2016 12:06:21 PM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0011	0.00063	0.037	J	mg/Kg-dr	1	9/27/2016 10:46:13 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.1	1.2	2.9	J	mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Arsenic	ND	1.0	2.9		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Barium	510	0.16	0.23		mg/Kg-dr	2	9/28/2016 5:33:15 PM	27709
Beryllium	0.95	0.040	0.17		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Cadmium	ND	0.073	0.11		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Chromium	15	0.11	0.34		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Cobalt	9.1	0.13	0.34		mg/Kg-dr	1	9/28/2016 10:50:13 PM	27709
Iron	20000	86	290		mg/Kg-dr	100	9/28/2016 11:00:48 PM	27709
Lead	1.1	0.20	0.29		mg/Kg-dr	1	9/28/2016 10:50:13 PM	27709
Manganese	1400	0.61	1.1		mg/Kg-dr	10	9/28/2016 10:51:59 PM	27709
Nickel	16	0.17	0.57		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Selenium	ND	2.1	2.9		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Silver	ND	0.072	0.29		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Vanadium	21	0.20	2.9		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Zinc	26	0.40	2.9		mg/Kg-dr	1	9/28/2016 10:50:13 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.096	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Acenaphthylene	ND	0.091	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Aniline	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Anthracene	ND	0.075	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benz(a)anthracene	ND	0.097	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(a)pyrene	ND	0.085	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(g,h,i)perylene	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(k)fluoranthene	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzoic acid	ND	0.093	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzyl alcohol	ND	0.088	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 1:40:00 PM
Lab ID: 1609B57-006
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.083	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Bis(2-ethylhexyl)phthalate	0.16	0.092	0.56	J	mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Butyl benzyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Carbazole	ND	0.076	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Chloronaphthalene	ND	0.088	0.28		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Chlorophenol	ND	0.089	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Chrysene	ND	0.096	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Di-n-butyl phthalate	0.15	0.084	0.45	J	mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Di-n-octyl phthalate	ND	0.096	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Dibenz(a,h)anthracene	ND	0.091	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,2-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,3-Dichlorobenzene	ND	0.087	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,4-Dichlorobenzene	ND	0.095	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
3,3´-Dichlorobenzidine	ND	0.083	0.28		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Diethyl phthalate	0.18	0.11	0.22	J	mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dichlorophenol	ND	0.10	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.068	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dinitrophenol	ND	0.075	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Fluoranthene	ND	0.065	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachlorobenzene	ND	0.089	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachlorobutadiene	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachloroethane	ND	0.097	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.088	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Methylphenol	ND	0.094	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700

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Client Sample ID: SWMU 10-24 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 1:40:00 PM
Lab ID: 1609B57-006
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.081	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
3-Nitroaniline	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Nitroaniline	ND	0.079	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Nitrophenol	ND	0.086	0.28		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Pentachlorophenol	ND	0.072	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Phenanthrene	ND	0.076	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Phenol	ND	0.085	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Pyrene	ND	0.085	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Pyridine	ND	0.089	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4,6-Trichlorophenol	ND	0.093	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Surr: 2-Fluorophenol	81.8	0	35-97.9		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: Phenol-d5	85.3	0	37.3-105		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: 2,4,6-Tribromophenol	80.6	0	35.6-118		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: Nitrobenzene-d5	69.7		41.2-107		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: 2-Fluorobiphenyl	71.9		41.9-119		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: 4-Terphenyl-d14	67.3		15-132		%Rec	1	9/29/2016 4:32:05 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	10.0	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Toluene	6.80	0.263	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Ethylbenzene	1.84	0.292	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.365	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,4-Trimethylbenzene	1.53	0.369	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,3,5-Trimethylbenzene	1.05	0.359	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dichloroethane (EDC)	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dibromoethane (EDB)	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Naphthalene	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1-Methylnaphthalene	0.772	0.247	4.35	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Methylnaphthalene	1.05	0.572	4.35	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Acetone	4.62	0.643	10.9	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Bromobenzene	ND	0.221	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Bromodichloromethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629

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Project: SWMU 10
Collection Date: 9/19/2016 1:40:00 PM
Lab ID: 1609B57-006 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromoform	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Bromomethane	ND	0.391	3.26		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Butanone	ND	0.784	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Carbon disulfide	ND	0.804	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Carbon tetrachloride	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chlorobenzene	ND	0.249	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chloroethane	ND	0.401	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chloroform	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chloromethane	ND	0.551	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Chlorotoluene	ND	0.370	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
4-Chlorotoluene	ND	0.361	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
cis-1,2-DCE	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
cis-1,3-Dichloropropene	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.231	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Dibromochloromethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Dibromomethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dichlorobenzene	ND	0.317	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,3-Dichlorobenzene	ND	0.402	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,4-Dichlorobenzene	ND	0.407	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Dichlorodifluoromethane	ND	1.27	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1-Dichloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1-Dichloroethene	ND	0.356	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dichloropropane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,3-Dichloropropane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2,2-Dichloropropane	ND	0.275	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1-Dichloropropene	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Hexachlorobutadiene	ND	0.496	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Hexanone	ND	0.541	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Isopropylbenzene	0.478	0.274	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
4-Isopropyltoluene	ND	0.408	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
4-Methyl-2-pentanone	ND	4.35	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Methylene chloride	ND	2.17	3.26		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
n-Butylbenzene	ND	0.529	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
n-Propylbenzene	0.641	0.389	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
sec-Butylbenzene	ND	0.386	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Styrene	ND	0.278	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
tert-Butylbenzene	ND	0.318	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-24 (15-16')
Project: SWMU 10
Collection Date: 9/19/2016 1:40:00 PM
Lab ID: 1609B57-006
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Tetrachloroethene (PCE)	ND	0.286	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
trans-1,2-DCE	ND	0.220	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
trans-1,3-Dichloropropene	ND	0.263	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.526	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.659	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,1-Trichloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,2-Trichloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Trichloroethene (TCE)	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Trichlorofluoromethane	ND	0.273	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,3-Trichloropropane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Vinyl chloride	ND	0.572	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Xylenes, Total	5.28	0.867	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
Surr: Toluene-d8	98.1	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.57	3.8		mg/Kg-dr	1	9/23/2016 1:43:29 PM	R37464
Surr: BFB	101	0	70-130		%Rec	1	9/23/2016 1:43:29 PM	R37464

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 3:45:00 PM
Lab ID: 1609B57-007 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	790	2.1	11		mg/Kg-dr	1	9/23/2016 12:27:56 PM	27652
Motor Oil Range Organics (MRO)	100	56	56		mg/Kg-dr	1	9/23/2016 12:27:56 PM	27652
Surr: DNOP	99.6	0	70-130		%Rec	1	9/23/2016 12:27:56 PM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0031	0.00065	0.038	J	mg/Kg-dr	1	9/27/2016 10:51:45 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Arsenic	ND	1.0	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Barium	96	0.082	0.12		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Beryllium	0.58	0.040	0.17		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Cadmium	ND	0.073	0.12		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Chromium	7.2	0.11	0.35		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Cobalt	3.9	0.13	0.35		mg/Kg-dr	1	9/28/2016 11:02:19 PM	27709
Iron	12000	44	140		mg/Kg-dr	50	9/28/2016 11:04:18 PM	27709
Lead	2.1	0.20	0.29		mg/Kg-dr	1	9/28/2016 11:02:19 PM	27709
Manganese	500	0.12	0.23		mg/Kg-dr	2	9/28/2016 5:34:45 PM	27709
Nickel	5.7	0.17	0.58		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Selenium	ND	2.1	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Silver	ND	0.072	0.29		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Vanadium	15	0.20	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Zinc	11	0.40	2.9		mg/Kg-dr	1	9/28/2016 11:02:19 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Aniline	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(a)pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzoic acid	0.21	0.094	0.57	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzyl alcohol	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 3:45:00 PM
Lab ID: 1609B57-007
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Bis(2-ethylhexyl)phthalate	0.22	0.093	0.57	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Chloronaphthalene	ND	0.090	0.28		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Di-n-butyl phthalate	0.35	0.085	0.46	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Di-n-octyl phthalate	ND	0.097	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Dibenz(a,h)anthracene	ND	0.092	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,2-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,4-Dichlorobenzene	ND	0.096	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
3,3´-Dichlorobenzidine	ND	0.084	0.28		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Diethyl phthalate	0.28	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dimethylphenol	0.17	0.12	0.34	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dinitrophenol	ND	0.076	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Fluorene	0.19	0.10	0.23	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Isophorone	ND	0.13	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1-Methylnaphthalene	0.82	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Methylnaphthalene	1.4	0.14	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Methylphenol	0.53	0.095	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 3:45:00 PM
Lab ID: 1609B57-007
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Naphthalene	0.28	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Nitroaniline	ND	0.080	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Nitrophenol	ND	0.087	0.28		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Pentachlorophenol	ND	0.073	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Phenanthrene	0.39	0.077	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Phenol	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Pyridine	ND	0.090	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4,6-Trichlorophenol	ND	0.095	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Surr: 2-Fluorophenol	75.1	0	35-97.9		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: Phenol-d5	80.1	0	37.3-105		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: 2,4,6-Tribromophenol	76.0	0	35.6-118		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: Nitrobenzene-d5	63.8		41.2-107		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: 2-Fluorobiphenyl	73.7		41.9-119		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: 4-Terphenyl-d14	66.6		15-132		%Rec	1	9/29/2016 4:59:58 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	ND	0.85	1.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Toluene	0.29	0.13	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Ethylbenzene	1.0	0.17	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Methyl tert-butyl ether (MTBE)	ND	0.67	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,4-Trimethylbenzene	5.8	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,3,5-Trimethylbenzene	2.6	0.15	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dichloroethane (EDC)	ND	0.56	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dibromoethane (EDB)	ND	0.15	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Naphthalene	3.8	0.33	4.3	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1-Methylnaphthalene	13	0.47	8.5		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Methylnaphthalene	16	0.46	8.5		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Acetone	ND	2.8	32		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Bromobenzene	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Bromodichloromethane	ND	0.12	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 3:45:00 PM
Lab ID: 1609B57-007
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Bromoform	ND	0.26	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Bromomethane	ND	0.79	6.4		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Butanone	ND	1.2	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Carbon disulfide	ND	0.70	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Carbon tetrachloride	ND	0.14	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chlorobenzene	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chloroethane	ND	0.43	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chloroform	ND	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chloromethane	ND	0.19	6.4		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Chlorotoluene	ND	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
4-Chlorotoluene	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
cis-1,2-DCE	ND	0.12	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
cis-1,3-Dichloropropene	ND	0.20	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dibromo-3-chloropropane	ND	0.65	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Dibromochloromethane	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Dibromomethane	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dichlorobenzene	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,3-Dichlorobenzene	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,4-Dichlorobenzene	ND	0.26	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Dichlorodifluoromethane	ND	0.66	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1-Dichloroethane	ND	0.12	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1-Dichloroethene	ND	0.70	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dichloropropane	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,3-Dichloropropane	ND	0.24	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2,2-Dichloropropane	ND	0.12	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1-Dichloropropene	ND	0.17	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Hexachlorobutadiene	ND	0.26	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Hexanone	ND	1.2	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Isopropylbenzene	0.54	0.18	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
4-Isopropyltoluene	0.61	0.19	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
4-Methyl-2-pentanone	ND	0.62	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Methylene chloride	ND	0.62	6.4		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
n-Butylbenzene	0.95	0.19	6.4	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
n-Propylbenzene	0.93	0.16	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
sec-Butylbenzene	0.74	0.30	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Styrene	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
tert-Butylbenzene	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,1,2-Tetrachloroethane	ND	0.20	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,2,2-Tetrachloroethane	ND	0.35	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (2-2.5')
Project: SWMU 10
Collection Date: 9/19/2016 3:45:00 PM
Lab ID: 1609B57-007
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Tetrachloroethene (PCE)	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
trans-1,2-DCE	ND	0.60	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
trans-1,3-Dichloropropene	ND	0.31	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,3-Trichlorobenzene	ND	0.32	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,4-Trichlorobenzene	ND	0.23	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,1-Trichloroethane	ND	0.13	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,2-Trichloroethane	ND	0.25	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Trichloroethene (TCE)	ND	0.23	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Trichlorofluoromethane	ND	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,3-Trichloropropane	ND	0.37	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Vinyl chloride	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Xylenes, Total	10	0.40	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Surr: Dibromofluoromethane	104		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
Surr: 1,2-Dichloroethane-d4	104		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
Surr: Toluene-d8	90.2		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
Surr: 4-Bromofluorobenzene	83.5		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	730	32	210		mg/Kg-dr	50	9/29/2016 11:03:07 AM	G37576
Surr: BFB	106	0	70-130		%Rec	50	9/29/2016 11:03:07 AM	G37576

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (10-12')
Project: SWMU 10
Collection Date: 9/19/2016 4:00:00 PM
Lab ID: 1609B57-008 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	96	2.1	11		mg/Kg-dr	1	9/23/2016 12:49:36 PM	27652
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	9/23/2016 12:49:36 PM	27652
Surr: DNOP	96.3	0	70-130		%Rec	1	9/23/2016 12:49:36 PM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	18	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0014	0.00069	0.040	J	mg/Kg-dr	1	9/27/2016 10:53:34 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	2.5	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Arsenic	ND	2.2	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Barium	190	0.18	0.25		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Beryllium	1.4	0.086	0.37		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Cadmium	ND	0.16	0.25		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Chromium	16	0.23	0.74		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Cobalt	7.6	0.28	0.74		mg/Kg-dr	2	9/28/2016 11:05:46 PM	27709
Iron	23000	93	310		mg/Kg-dr	100	9/28/2016 11:07:43 PM	27709
Lead	2.9	0.43	0.62		mg/Kg-dr	2	9/28/2016 11:05:46 PM	27709
Manganese	300	0.13	0.25		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Nickel	14	0.38	1.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Selenium	ND	4.5	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Silver	ND	0.16	0.62		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Vanadium	25	0.44	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Zinc	26	0.86	6.2		mg/Kg-dr	2	9/28/2016 11:05:46 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Aniline	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(a)pyrene	ND	0.091	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzoic acid	0.21	0.099	0.60	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (10-12')
Project: SWMU 10
Collection Date: 9/19/2016 4:00:00 PM
Lab ID: 1609B57-008 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.088	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Bis(2-ethylhexyl)phthalate	0.16	0.097	0.60	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Di-n-butyl phthalate	0.22	0.089	0.48	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,3-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
3,3´-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Diethyl phthalate	0.21	0.12	0.24	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Fluorene	0.15	0.11	0.24	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1-Methylnaphthalene	0.76	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Methylnaphthalene	1.3	0.14	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Methylphenol	0.17	0.10	0.48	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (10-12')
Project: SWMU 10
Collection Date: 9/19/2016 4:00:00 PM
Lab ID: 1609B57-008 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.087	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Naphthalene	0.28	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Phenanthrene	0.29	0.081	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Phenol	ND	0.090	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Pyrene	ND	0.090	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Surr: 2-Fluorophenol	52.2	0	35-97.9		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: Phenol-d5	58.6	0	37.3-105		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: 2,4,6-Tribromophenol	73.5	0	35.6-118		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: Nitrobenzene-d5	49.2		41.2-107		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: 2-Fluorobiphenyl	62.1		41.9-119		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: 4-Terphenyl-d14	58.3		15-132		%Rec	1	9/29/2016 5:28:00 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	26.6	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Toluene	3.13	0.195	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Ethylbenzene	14.1	0.217	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Methyl tert-butyl ether (MTBE)	0.944	0.271	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,4-Trimethylbenzene	14.6	0.274	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,3,5-Trimethylbenzene	4.60	0.266	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dichloroethane (EDC)	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dibromoethane (EDB)	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Naphthalene	6.28	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1-Methylnaphthalene	9.93	0.183	3.23		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Methylnaphthalene	8.58	0.425	3.23		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Acetone	8.75	0.478	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Bromobenzene	ND	0.164	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Bromodichloromethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (10-12')
Project: SWMU 10
Collection Date: 9/19/2016 4:00:00 PM
Lab ID: 1609B57-008 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromoform	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Bromomethane	ND	0.291	2.42		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Butanone	3.33	0.582	8.07	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Carbon disulfide	ND	0.597	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Carbon tetrachloride	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chlorobenzene	ND	0.185	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chloroethane	ND	0.298	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chloroform	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chloromethane	ND	0.409	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Chlorotoluene	ND	0.275	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
4-Chlorotoluene	ND	0.268	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
cis-1,2-DCE	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
cis-1,3-Dichloropropene	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.172	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Dibromochloromethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Dibromomethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dichlorobenzene	ND	0.235	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,3-Dichlorobenzene	ND	0.298	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,4-Dichlorobenzene	ND	0.302	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Dichlorodifluoromethane	ND	0.942	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1-Dichloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1-Dichloroethene	ND	0.264	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dichloropropane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,3-Dichloropropane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2,2-Dichloropropane	ND	0.204	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1-Dichloropropene	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Hexachlorobutadiene	ND	0.368	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Hexanone	ND	0.402	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Isopropylbenzene	1.86	0.203	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
4-Isopropyltoluene	0.613	0.303	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
4-Methyl-2-pentanone	ND	3.23	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Methylene chloride	ND	1.61	2.42		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
n-Butylbenzene	0.759	0.393	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
n-Propylbenzene	2.87	0.289	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
sec-Butylbenzene	0.621	0.287	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Styrene	ND	0.206	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
tert-Butylbenzene	ND	0.236	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (10-12')
Project: SWMU 10
Collection Date: 9/19/2016 4:00:00 PM
Lab ID: 1609B57-008 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Tetrachloroethene (PCE)	ND	0.212	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
trans-1,2-DCE	ND	0.163	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
trans-1,3-Dichloropropene	ND	0.195	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.391	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.489	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,1-Trichloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,2-Trichloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Trichloroethene (TCE)	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Trichlorofluoromethane	ND	0.203	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,3-Trichloropropane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Vinyl chloride	ND	0.425	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Xylenes, Total	31.7	0.643	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	15	0.50	3.3		mg/Kg-dr	1	9/23/2016 2:41:09 PM	R37464
Surr: BFB	101	0	70-130		%Rec	1	9/23/2016 2:41:09 PM	R37464

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (16.5-18')
Project: SWMU 10
Collection Date: 9/19/2016 4:15:00 PM
Lab ID: 1609B57-009 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	4.5	2.1	11	J	mg/Kg-dr	1	9/23/2016 1:11:16 PM	27652
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	9/23/2016 1:11:16 PM	27652
Surr: DNOP	85.0	0	70-130		%Rec	1	9/23/2016 1:11:16 PM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0014	0.00065	0.038	J	mg/Kg-dr	1	9/27/2016 10:55:24 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	1.6	1.2	2.9	J	mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Arsenic	ND	1.0	2.9		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Barium	460	0.16	0.23		mg/Kg-dr	2	9/28/2016 5:37:34 PM	27709
Beryllium	0.86	0.040	0.17		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Cadmium	ND	0.073	0.12		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Chromium	15	0.11	0.35		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Cobalt	9.5	0.13	0.35		mg/Kg-dr	1	9/28/2016 11:09:12 PM	27709
Iron	18000	87	290		mg/Kg-dr	100	9/28/2016 11:12:35 PM	27709
Lead	ND	0.20	0.29		mg/Kg-dr	1	9/28/2016 11:09:12 PM	27709
Manganese	1100	0.62	1.2		mg/Kg-dr	10	9/28/2016 11:10:58 PM	27709
Nickel	15	0.17	0.58		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Selenium	ND	2.1	2.9		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Silver	ND	0.072	0.29		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Vanadium	18	0.20	2.9		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Zinc	27	0.40	2.9		mg/Kg-dr	1	9/28/2016 11:09:12 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Aniline	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(a)pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzoic acid	ND	0.094	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzyl alcohol	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (16.5-18')
Project: SWMU 10
Collection Date: 9/19/2016 4:15:00 PM
Lab ID: 1609B57-009
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Bis(2-ethylhexyl)phthalate	0.17	0.093	0.57	J	mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Chloronaphthalene	ND	0.090	0.28		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Di-n-butyl phthalate	0.35	0.085	0.46	J	mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Di-n-octyl phthalate	ND	0.097	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Dibenz(a,h)anthracene	ND	0.092	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,2-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,4-Dichlorobenzene	ND	0.096	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
3,3´-Dichlorobenzidine	ND	0.084	0.28		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Diethyl phthalate	0.24	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dinitrophenol	ND	0.076	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Isophorone	ND	0.13	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Methylnaphthalene	ND	0.14	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Methylphenol	ND	0.095	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (16.5-18')
Project: SWMU 10
Collection Date: 9/19/2016 4:15:00 PM
Lab ID: 1609B57-009
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Nitroaniline	ND	0.080	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Nitrophenol	ND	0.087	0.28		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Pentachlorophenol	ND	0.073	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Phenanthrene	ND	0.077	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Phenol	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Pyridine	ND	0.090	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4,6-Trichlorophenol	ND	0.094	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Surr: 2-Fluorophenol	74.9	0	35-97.9		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: Phenol-d5	74.2	0	37.3-105		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: 2,4,6-Tribromophenol	73.2	0	35.6-118		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: Nitrobenzene-d5	65.3		41.2-107		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: 2-Fluorobiphenyl	64.9		41.9-119		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: 4-Terphenyl-d14	63.1		15-132		%Rec	1	9/29/2016 5:55:59 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	9.53	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Toluene	6.89	0.230	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Ethylbenzene	1.80	0.256	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.320	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,4-Trimethylbenzene	1.50	0.323	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,3,5-Trimethylbenzene	1.06	0.314	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dichloroethane (EDC)	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dibromoethane (EDB)	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Naphthalene	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1-Methylnaphthalene	0.628	0.216	3.81	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Methylnaphthalene	0.761	0.501	3.81	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Acetone	4.29	0.563	9.52	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Bromobenzene	ND	0.194	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Bromodichloromethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (16.5-18')
Project: SWMU 10
Collection Date: 9/19/2016 4:15:00 PM
Lab ID: 1609B57-009
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromoform	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Bromomethane	ND	0.343	2.85		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Butanone	3.59	0.686	9.52	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Carbon disulfide	ND	0.704	9.52		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Carbon tetrachloride	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chlorobenzene	ND	0.218	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chloroethane	ND	0.351	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chloroform	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chloromethane	ND	0.482	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Chlorotoluene	ND	0.324	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
4-Chlorotoluene	ND	0.316	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
cis-1,2-DCE	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
cis-1,3-Dichloropropene	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.203	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Dibromochloromethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Dibromomethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dichlorobenzene	ND	0.277	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,3-Dichlorobenzene	ND	0.352	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,4-Dichlorobenzene	ND	0.356	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Dichlorodifluoromethane	ND	1.11	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1-Dichloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1-Dichloroethene	ND	0.312	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dichloropropane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,3-Dichloropropane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2,2-Dichloropropane	ND	0.240	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1-Dichloropropene	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Hexachlorobutadiene	ND	0.434	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Hexanone	ND	0.474	9.52		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Isopropylbenzene	0.438	0.240	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
4-Isopropyltoluene	ND	0.357	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
4-Methyl-2-pentanone	ND	3.81	9.52		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Methylene chloride	ND	1.90	2.85		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
n-Butylbenzene	ND	0.463	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
n-Propylbenzene	0.581	0.341	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
sec-Butylbenzene	ND	0.338	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Styrene	ND	0.243	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
tert-Butylbenzene	ND	0.278	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25 (16.5-18')
Project: SWMU 10
Collection Date: 9/19/2016 4:15:00 PM
Lab ID: 1609B57-009 **Matrix:** SOIL **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Tetrachloroethene (PCE)	ND	0.250	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
trans-1,2-DCE	ND	0.192	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
trans-1,3-Dichloropropene	ND	0.230	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.461	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.577	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,1-Trichloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,2-Trichloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Trichloroethene (TCE)	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Trichlorofluoromethane	ND	0.239	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,3-Trichloropropane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Vinyl chloride	ND	0.501	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Xylenes, Total	5.13	0.759	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Surr: 1,2-Dichloroethane-d4	120	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
Surr: Toluene-d8	97.3	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	1.5	0.57	3.8	J	mg/Kg-dr	1	9/23/2016 3:09:54 PM	R37464
Surr: BFB	105	0	70-130		%Rec	1	9/23/2016 3:09:54 PM	R37464

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 9/19/2016
Lab ID: 1609B57-010
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	3400	21	110		mg/Kg-dr	10	9/23/2016 10:39:42 AM	27652
Motor Oil Range Organics (MRO)	ND	560	560		mg/Kg-dr	10	9/23/2016 10:39:42 AM	27652
Surr: DNOP	0	0	70-130	S	%Rec	10	9/23/2016 10:39:42 AM	27652
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	10	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0053	0.00063	0.037	J	mg/Kg-dr	1	9/27/2016 10:57:15 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.1	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Arsenic	ND	0.99	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Barium	130	0.080	0.11		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Beryllium	0.69	0.039	0.17		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Cadmium	ND	0.071	0.11		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Chromium	7.7	0.11	0.34		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Cobalt	6.1	0.62	1.7		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
Iron	13000	42	140		mg/Kg-dr	50	9/28/2016 11:26:26 PM	27709
Lead	3.4	0.97	1.4		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
Manganese	970	0.30	0.56		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
Nickel	6.7	0.17	0.56		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Selenium	ND	2.0	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Silver	ND	0.070	0.28		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Vanadium	17	0.20	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Zinc	16	1.9	14		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.93	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Acenaphthylene	ND	0.88	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Aniline	ND	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Anthracene	ND	0.72	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Azobenzene	ND	1.3	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benz(a)anthracene	ND	0.93	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(a)pyrene	ND	0.82	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(b)fluoranthene	ND	0.98	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(g,h,i)perylene	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(k)fluoranthene	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzoic acid	2.7	0.90	5.4	JD	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzyl alcohol	ND	0.85	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Bis(2-chloroethoxy)methane	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 9/19/2016
Lab ID: 1609B57-010
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.80	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.97	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Bis(2-ethylhexyl)phthalate	ND	0.88	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Bromophenyl phenyl ether	ND	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Butyl benzyl phthalate	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Carbazole	ND	0.73	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Chloro-3-methylphenol	ND	1.3	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Chloroaniline	ND	1.2	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Chloronaphthalene	ND	0.85	2.7	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Chlorophenol	ND	0.86	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Chlorophenyl phenyl ether	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Chrysene	ND	0.92	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Di-n-butyl phthalate	ND	0.81	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Di-n-octyl phthalate	ND	0.93	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Dibenz(a,h)anthracene	ND	0.88	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Dibenzofuran	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,2-Dichlorobenzene	ND	0.83	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,3-Dichlorobenzene	ND	0.84	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,4-Dichlorobenzene	ND	0.92	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
3,3´-Dichlorobenzidine	ND	0.80	2.7	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Diethyl phthalate	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Dimethyl phthalate	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dichlorophenol	ND	1.0	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dimethylphenol	ND	1.2	3.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.66	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dinitrophenol	ND	0.72	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dinitrotoluene	ND	0.97	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,6-Dinitrotoluene	ND	1.1	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Fluoranthene	ND	0.63	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Fluorene	2.8	0.99	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachlorobenzene	ND	0.86	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachlorobutadiene	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachlorocyclopentadiene	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachloroethane	ND	0.93	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.85	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Isophorone	ND	1.2	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1-Methylnaphthalene	14	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Methylnaphthalene	24	1.3	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Methylphenol	ND	0.91	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 9/19/2016
Lab ID: 1609B57-010
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	0.79	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
N-Nitrosodi-n-propylamine	ND	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
N-Nitrosodiphenylamine	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Naphthalene	4.7	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Nitroaniline	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
3-Nitroaniline	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Nitroaniline	ND	0.77	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Nitrobenzene	ND	1.1	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Nitrophenol	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Nitrophenol	ND	0.83	2.7	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Pentachlorophenol	ND	0.70	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Phenanthrene	5.1	0.74	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Phenol	ND	0.82	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Pyrene	ND	0.82	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Pyridine	ND	0.86	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,2,4-Trichlorobenzene	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4,5-Trichlorophenol	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4,6-Trichlorophenol	ND	0.90	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Surr: 2-Fluorophenol	0	0	35-97.9	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: Phenol-d5	0	0	37.3-105	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: 2,4,6-Tribromophenol	0	0	35.6-118	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: Nitrobenzene-d5	0		41.2-107	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: 2-Fluorobiphenyl	0		41.9-119	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: 4-Terphenyl-d14	0		15-132	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	ND	0.74	0.93	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Toluene	0.20	0.11	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Ethylbenzene	0.99	0.15	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Methyl tert-butyl ether (MTBE)	ND	0.58	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,4-Trimethylbenzene	5.8	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,3,5-Trimethylbenzene	2.5	0.13	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dichloroethane (EDC)	ND	0.48	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dibromoethane (EDB)	ND	0.13	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Naphthalene	4.1	0.29	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1-Methylnaphthalene	13	0.41	7.4	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Methylnaphthalene	18	0.40	7.4	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Acetone	ND	2.4	28	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Bromobenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Bromodichloromethane	ND	0.11	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 9/19/2016
Lab ID: 1609B57-010
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Bromoform	ND	0.23	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Bromomethane	0.69	0.68	5.6	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Butanone	ND	1.1	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Carbon disulfide	ND	0.61	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Carbon tetrachloride	ND	0.12	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chlorobenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chloroethane	ND	0.37	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chloroform	ND	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chloromethane	ND	0.17	5.6	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Chlorotoluene	ND	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
4-Chlorotoluene	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
cis-1,2-DCE	ND	0.11	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
cis-1,3-Dichloropropene	ND	0.17	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dibromo-3-chloropropane	ND	0.57	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Dibromochloromethane	ND	0.17	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Dibromomethane	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dichlorobenzene	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,3-Dichlorobenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,4-Dichlorobenzene	ND	0.23	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Dichlorodifluoromethane	ND	0.57	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1-Dichloroethane	ND	0.10	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1-Dichloroethene	ND	0.61	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dichloropropane	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,3-Dichloropropane	ND	0.21	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2,2-Dichloropropane	ND	0.11	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1-Dichloropropene	ND	0.15	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Hexachlorobutadiene	ND	0.23	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Hexanone	ND	1.0	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Isopropylbenzene	0.50	0.16	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
4-Isopropyltoluene	0.59	0.17	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
4-Methyl-2-pentanone	ND	0.54	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Methylene chloride	ND	0.54	5.6	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
n-Butylbenzene	0.87	0.16	5.6	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
n-Propylbenzene	0.98	0.14	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
sec-Butylbenzene	0.67	0.26	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Styrene	ND	0.17	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
tert-Butylbenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,1,2-Tetrachloroethane	ND	0.18	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,2,2-Tetrachloroethane	ND	0.30	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 9/19/2016
Lab ID: 1609B57-010
Matrix: SOIL
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Tetrachloroethene (PCE)	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
trans-1,2-DCE	ND	0.52	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
trans-1,3-Dichloropropene	ND	0.27	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,3-Trichlorobenzene	ND	0.28	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,4-Trichlorobenzene	ND	0.20	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,1-Trichloroethane	ND	0.11	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,2-Trichloroethane	ND	0.22	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Trichloroethene (TCE)	ND	0.20	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Trichlorofluoromethane	ND	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,3-Trichloropropane	ND	0.32	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Vinyl chloride	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Xylenes, Total	9.9	0.35	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Surr: Dibromofluoromethane	102		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
Surr: 1,2-Dichloroethane-d4	100		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
Surr: Toluene-d8	97.0		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
Surr: 4-Bromofluorobenzene	84.4		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	510	28	190	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	R37464
Surr: BFB	103	0	70-130	D	%Rec	50	9/23/2016 3:38:43 PM	R37464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1609B57-011
Matrix: MEOH (SOIL)
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	ND	0.020	0.025		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Toluene	ND	0.0030	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Ethylbenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Methyl tert-butyl ether (MTBE)	ND	0.016	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,4-Trimethylbenzene	ND	0.0037	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,3,5-Trimethylbenzene	ND	0.0036	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dichloroethane (EDC)	ND	0.013	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dibromoethane (EDB)	ND	0.0036	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Naphthalene	ND	0.0078	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Acetone	ND	0.065	0.75		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromobenzene	ND	0.0040	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromodichloromethane	ND	0.0029	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromoform	ND	0.0061	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromomethane	0.054	0.018	0.15	J	mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Butanone	ND	0.029	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Carbon tetrachloride	ND	0.0033	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chlorobenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chloroethane	ND	0.010	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chloroform	ND	0.0038	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chloromethane	ND	0.0044	0.15		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Chlorotoluene	ND	0.0037	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
4-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
cis-1,2-DCE	ND	0.0029	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
cis-1,3-Dichloropropene	ND	0.0046	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dibromo-3-chloropropane	ND	0.015	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Dibromochloromethane	ND	0.0045	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Dibromomethane	ND	0.0043	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dichlorobenzene	ND	0.0044	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,3-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Dichlorodifluoromethane	ND	0.015	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1-Dichloroethane	ND	0.0027	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1-Dichloroethene	ND	0.016	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dichloropropane	ND	0.0042	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,3-Dichloropropane	ND	0.0057	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2,2-Dichloropropane	ND	0.0029	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1609B57-011
Matrix: MEOH (SOIL)
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
1,1-Dichloropropene	ND	0.0040	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Hexachlorobutadiene	ND	0.0061	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Hexanone	ND	0.027	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Isopropylbenzene	ND	0.0043	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
4-Isopropyltoluene	ND	0.0045	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
4-Methyl-2-pentanone	ND	0.015	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Methylene chloride	ND	0.014	0.15		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
n-Butylbenzene	ND	0.0044	0.15		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
n-Propylbenzene	ND	0.0038	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
sec-Butylbenzene	ND	0.0069	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Styrene	ND	0.0045	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
tert-Butylbenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,1,2-Tetrachloroethane	ND	0.0048	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,2,2-Tetrachloroethane	ND	0.0081	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Tetrachloroethene (PCE)	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
trans-1,2-DCE	ND	0.014	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
trans-1,3-Dichloropropene	ND	0.0073	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,3-Trichlorobenzene	ND	0.0075	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,4-Trichlorobenzene	ND	0.0053	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,1-Trichloroethane	ND	0.0031	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,2-Trichloroethane	ND	0.0059	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Trichloroethene (TCE)	ND	0.0054	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Trichlorofluoromethane	ND	0.0037	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,3-Trichloropropane	ND	0.0086	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Vinyl chloride	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Xylenes, Total	ND	0.0095	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Surr: Dibromofluoromethane	113		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484
Surr: 1,2-Dichloroethane-d4	103		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484
Surr: Toluene-d8	92.3		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484
Surr: 4-Bromofluorobenzene	92.6		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB091916
Project: SWMU 10
Collection Date: 9/19/2016 4:45:00 PM
Lab ID: 1609B57-012
Matrix: AQUEOUS
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	0.69	1.0		mg/L	1	9/26/2016 12:05:18 PM	27667
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	9/26/2016 12:05:18 PM	27667
Surr: DNOP	112	0	77.1-144		%Rec	1	9/26/2016 12:05:18 PM	27667
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	ND	0.050	0.10		mg/L	1	9/21/2016 7:36:29 PM	R37390
Chloride	0.11	0.051	0.50	J	mg/L	1	9/21/2016 7:36:29 PM	R37390
Sulfate	ND	0.14	0.50		mg/L	1	9/21/2016 7:36:29 PM	R37390
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0013	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Beryllium	ND	0.00031	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Cadmium	ND	0.00075	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Chromium	ND	0.0018	0.0060		mg/L	1	9/29/2016 9:56:42 AM	B37552
Cobalt	0.0017	0.00074	0.0060	J	mg/L	1	9/29/2016 9:56:42 AM	B37552
Iron	ND	0.020	0.020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Manganese	ND	0.00032	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Nickel	ND	0.0024	0.010		mg/L	1	9/29/2016 9:56:42 AM	B37552
Silver	ND	0.0028	0.0050		mg/L	1	9/29/2016 9:56:42 AM	B37552
Vanadium	ND	0.0013	0.050		mg/L	1	9/29/2016 9:56:42 AM	B37552
Zinc	ND	0.0028	0.010		mg/L	1	9/29/2016 9:56:42 AM	B37552
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0013	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Beryllium	ND	0.00036	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Cadmium	ND	0.0015	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Chromium	ND	0.0027	0.0060		mg/L	1	9/29/2016 8:43:04 AM	C37552
Cobalt	ND	0.0017	0.0060		mg/L	1	9/29/2016 8:43:04 AM	C37552
Iron	ND	0.020	0.020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Manganese	ND	0.00032	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Nickel	ND	0.0031	0.010		mg/L	1	9/29/2016 8:43:04 AM	C37552
Silver	ND	0.0028	0.0050		mg/L	1	9/29/2016 8:43:04 AM	C37552
Vanadium	ND	0.0013	0.050		mg/L	1	9/29/2016 8:43:04 AM	C37552
Zinc	ND	0.0027	0.010		mg/L	1	9/29/2016 8:43:04 AM	C37552
EPA 200.8: DISSOLVED METALS							Analyst: **JLF**	
Antimony	ND	0.00047	0.0010		mg/L	1	9/22/2016 10:18:05 PM	B37425
Arsenic	ND	0.00014	0.0010		mg/L	1	9/22/2016 10:18:05 PM	B37425
Lead	ND	0.00017	0.00050		mg/L	1	9/22/2016 10:18:05 PM	B37425
Selenium	ND	0.00021	0.0010		mg/L	1	9/22/2016 10:18:05 PM	B37425
EPA 200.8: METALS							Analyst: **JLF**	

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **JLF**	
Antimony	ND	0.00047	0.0010		mg/L	1	9/29/2016 5:36:46 PM	A37587
Arsenic	ND	0.00021	0.0010		mg/L	1	9/27/2016 5:41:52 PM	A37522
Lead	ND	0.00017	0.00050		mg/L	1	9/27/2016 5:41:52 PM	A37522
Selenium	ND	0.00021	0.0010		mg/L	1	9/27/2016 5:41:52 PM	A37522
EPA METHOD 245.1: MERCURY							Analyst: **pmf**	
Mercury	0.000069	0.000053	0.00020	J	mg/L	1	9/27/2016 12:47:13 PM	27692
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Acenaphthylene	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Aniline	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Anthracene	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Azobenzene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benz(a)anthracene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(a)pyrene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzoic acid	6.2	2.6	20	J	µg/L	1	9/28/2016 2:28:52 PM	27668
Benzyl alcohol	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-ethylhexyl)phthalate	2.7	2.6	10	J	µg/L	1	9/28/2016 2:28:52 PM	27668
4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Butyl benzyl phthalate	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Carbazole	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Chloroaniline	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Chloronaphthalene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Chlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Chrysene	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Di-n-butyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Di-n-octyl phthalate	ND	2.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Dibenzofuran	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
3,3´-Dichlorobenzidine	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Diethyl phthalate	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Dimethyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dichlorophenol	ND	2.3	20		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dimethylphenol	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dinitrophenol	ND	2.8	20		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Fluoranthene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Fluorene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachlorobenzene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachlorobutadiene	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachloroethane	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Isophorone	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1-Methylnaphthalene	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Methylnaphthalene	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Methylphenol	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
3+4-Methylphenol	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Naphthalene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Nitroaniline	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
3-Nitroaniline	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Nitroaniline	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Nitrobenzene	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Nitrophenol	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Nitrophenol	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Pentachlorophenol	ND	2.3	20		µg/L	1	9/28/2016 2:28:52 PM	27668
Phenanthrene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Phenol	ND	2.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Pyrene	ND	3.1	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Pyridine	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Surr: 2-Fluorophenol	55.7	0	15-123		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: Phenol-d5	40.1	0	15-124		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: 2,4,6-Tribromophenol	73.0	0	18.4-134		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: Nitrobenzene-d5	61.9	0	28.8-134		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: 2-Fluorobiphenyl	53.6	0	35.9-125		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: 4-Terphenyl-d14	61.2	0	15-146		%Rec	1	9/28/2016 2:28:52 PM	27668
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	ND	0.096	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Toluene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Ethylbenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Naphthalene	ND	0.093	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Methylnaphthalene	0.52	0.16	4.0	J	µg/L	1	9/23/2016 4:07:23 PM	W37464
Acetone	ND	4.9	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromobenzene	ND	0.098	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromodichloromethane	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromoform	ND	0.10	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromomethane	ND	0.78	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Butanone	ND	0.74	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Carbon disulfide	ND	0.60	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chlorobenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chloroethane	ND	0.19	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chloroform	ND	0.089	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chloromethane	ND	0.21	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Dibromochloromethane	ND	0.087	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Dibromomethane	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464

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EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Hexanone	ND	0.84	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Isopropylbenzene	ND	0.10	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Methylene Chloride	ND	0.19	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
n-Butylbenzene	ND	0.16	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
n-Propylbenzene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Styrene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Vinyl chloride	ND	0.20	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/23/2016 4:07:23 PM	W37464
Surr: 1,2-Dichloroethane-d4	99.3	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
Surr: Toluene-d8	95.9	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **AG**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB091916
Project: SWMU 10
Collection Date: 9/19/2016 4:45:00 PM
Lab ID: 1609B57-012
Matrix: AQUEOUS
Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	0.027	0.015	0.050	J	mg/L	1	9/23/2016 4:07:23 PM	G37464
Surr: BFB	101	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	G37464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-001C SWMU 10-23 (2-2.5 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-001
Collection Date: 09/19/16 11:40
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.099	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	7	102988
CYANIDE												
Cyanide, Total	ND	mg/kg		0.25	0.047	SW9012	09/26/16 10:23 / jmg	09/23/16 11:00	SW9010	SFA-201-B_160926A	15	102985

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-002C SWMU 10-23 (15-16 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-002
Collection Date: 09/19/16 11:55
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	8	102988
CYANIDE												
Cyanide, Total	0.071	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:31 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	18	102985

Report Definitions:
RL - Analyte reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-003C SWMU 10-24 (2-2.5 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-003
Collection Date: 09/19/16 12:55
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B : 9		102988
CYANIDE												
Cyanide, Total	0.12	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:34 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A : 19		102985

Report Definitions:
RL - Analyte reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-004C SWMU 10-24 (6-8 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-004
Collection Date: 09/19/16 13:10
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	10	102988
CYANIDE												
Cyanide, Total	0.19	mg/kg	J	0.25	0.048	SW9012	09/26/16 10:36 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	20	102985

Report Definitions:
RL - Analyte reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-005C SWMU 10-24 (8-10 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-005
Collection Date: 09/19/16 13:25
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.099	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B : 11		102988
CYANIDE												
Cyanide, Total	0.15	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:39 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A : 21		102985

Report Definitions:
RL - Analyte reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-006C SWMU 10-24)15-16 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-006
Collection Date: 09/19/16 13:40
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B : 12		102988
CYANIDE												
Cyanide, Total	ND	mg/kg		0.25	0.049	SW9012	09/26/16 10:42 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A : 22		102985

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-007C SWMU 10-25 (2-2.5 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-007
Collection Date: 09/19/16 15:45
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.099	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B : 13		102988
CYANIDE												
Cyanide, Total	0.12	mg/kg	J	0.25	0.048	SW9012	09/26/16 10:45 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A : 23		102985

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-008C SWMU 10-25 (10-12 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-008
Collection Date: 09/19/16 16:00
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B : 14		102988
CYANIDE												
Cyanide, Total	0.34	mg/kg		0.25	0.045	SW9012	09/26/16 10:47 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A : 24		102985

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-009C SWMU 10-25 (16.5-18 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-009
Collection Date: 09/19/16 16:15
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B : 15		102988
CYANIDE												
Cyanide, Total	0.076	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:50 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A : 25		102985

Report Definitions:
RL - Analyte reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-010C SWMU 10 DUP01
Project: Not Indicated
Matrix: Soil

Lab ID: B16091850-010
Collection Date: 09/19/16 16:15
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	18	102988
CYANIDE												
Cyanide, Total	0.063	mg/kg	J	0.25	0.049	SW9012	09/26/16 11:04 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	28	102985

Report Definitions:
RL - Analyte reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1609B57-012H EBO91916
Project: Not Indicated
Matrix: Aqueous

Lab ID: B16091850-011
Collection Date: 09/19/16 16:45
DateReceived: 09/22/16
Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Cyanide, Total	ND	mg/L		0.005	0.001	Kelada-01	09/23/16 13:42 / jmg			SFA-201-B_160923A : 71		R267573

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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DATES REPORT

Work Order: B16091850
Client: Hall Environmental
Project: Not Indicated

Revised Date: 10/11/16
Report Date: 10/03/16

Lab ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date Method Batch	Analysis Date
B16091850-001A	1609B57-001C SWMU 10-23 (2-2.5 Feet)	9/19/2016 11:40:00 AM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-001A	1609B57-001C SWMU 10-23 (2-2.5 Feet)	9/19/2016 11:40:00 AM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-002A	1609B57-002C SWMU 10-23 (15-16 Feet)	9/19/2016 11:55:00 AM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-002A	1609B57-002C SWMU 10-23 (15-16 Feet)	9/19/2016 11:55:00 AM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-003A	1609B57-003C SWMU 10-24 (2-2.5 Feet)	9/19/2016 12:55:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-003A	1609B57-003C SWMU 10-24 (2-2.5 Feet)	9/19/2016 12:55:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-004A	1609B57-004C SWMU 10-24 (6-8 Feet)	9/19/2016 1:10:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-004A	1609B57-004C SWMU 10-24 (6-8 Feet)	9/19/2016 1:10:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-005A	1609B57-005C SWMU 10-24 (8-10 Feet)	9/19/2016 1:25:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-005A	1609B57-005C SWMU 10-24 (8-10 Feet)	9/19/2016 1:25:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-006A	1609B57-006C SWMU 10-24)15-16 Feet)	9/19/2016 1:40:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-006A	1609B57-006C SWMU 10-24)15-16 Feet)	9/19/2016 1:40:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-007A	1609B57-007C SWMU 10-25 (2-2.5 Feet)	9/19/2016 3:45:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-007A	1609B57-007C SWMU 10-25 (2-2.5 Feet)	9/19/2016 3:45:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-008A	1609B57-008C SWMU 10-25 (10-12 Feet)	9/19/2016 4:00:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-008A	1609B57-008C SWMU 10-25 (10-12 Feet)	9/19/2016 4:00:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-009A	1609B57-009C SWMU 10-25 (16.5-18 Feet)	9/19/2016 4:15:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-009A	1609B57-009C SWMU 10-25 (16.5-18 Feet)	9/19/2016 4:15:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-010A	1609B57-010C SWMU 10 DUP01	9/19/2016 4:15:00 PM	Soil	Chromium, Hexavalent		09/23/2016 SW7196A [102988]	9/23/2016
B16091850-010A	1609B57-010C SWMU 10 DUP01	9/19/2016 4:15:00 PM	Soil	Total Cyanide		09/23/2016 SW9012 [102985]	9/26/2016
B16091850-011A	1609B57-012H EBO91916	9/19/2016 4:45:00 PM	Aqueous	Cyanide, Total		NA	9/23/2016

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: R267573

Date: *03-Oct-16*

Run ID :Run Order: **SFA-201-B_160923A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **Kelada-01**
Analysis Date: **09/23/16 10:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.0991	0.0050	0.1	0	99	90	110				

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 8** SampType: **Method Blank** Lab ID: **ICB** Method: **Kelada-01**
Analysis Date: **09/23/16 10:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	ND	0.001									

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 9** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **Kelada-01**
Analysis Date: **09/23/16 10:16** Units: **mg/L** **Prep Info:** Prep Date: **4/23/2002** Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.104	0.0050	0.1	0	104	90	110				

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 10** SampType: **Laboratory Control Sample** Lab ID: **LCS1-K4Fe(CN)6** Method: **Kelada-01**
Analysis Date: **09/23/16 10:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.197	0.0050	0.2	0	98	90	110				

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 69** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **Kelada-01**
Analysis Date: **09/23/16 13:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.103	0.0050	0.1	0	103	90	110				

Associated samples: **B16091850-011A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

Date: *03-Oct-16*

BatchID: R267573

Run ID :Run Order: **SFA-201-B_160923A: 70** SampType: **Continuing Calibration Blank** Lab ID: **CCB** Method: **Kelada-01**
Analysis Date: **09/23/16 13:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.000800	0.0050		0							

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 72** SampType: **Sample Matrix Spike** Lab ID: **B16091850-011AMS** Method: **Kelada-01**
Analysis Date: **09/23/16 13:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.103	0.0050	0.1	0	103	90	110				

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 73** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B16091850-011AMSD** Method: **Kelada-01**
Analysis Date: **09/23/16 13:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.104	0.0050	0.1	0	104	90	110	0.1032	0.4	10	

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 83** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **Kelada-01**
Analysis Date: **09/23/16 14:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.101	0.0050	0.1	0	101	90	110				

Associated samples: **B16091850-011A**

Run ID :Run Order: **SFA-201-B_160923A: 84** SampType: **Continuing Calibration Blank** Lab ID: **CCB** Method: **Kelada-01**
Analysis Date: **09/23/16 14:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.00290	0.0050		0							

Associated samples: **B16091850-011A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: R267640

Date: *03-Oct-16*

Run ID :Run Order: **SFA-201-B_160926A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **Kelada-01**

Analysis Date: **09/26/16 09:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.102	0.0050	0.1	0	102	90	110				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 26** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **Kelada-01**

Analysis Date: **09/26/16 10:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.103	0.0050	0.1	0	103	90	110				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 27** SampType: **Continuing Calibration Blank** Lab ID: **CCB** Method: **Kelada-01**

Analysis Date: **09/26/16 10:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.00180	0.0050		0							

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 35** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **Kelada-01**

Analysis Date: **09/26/16 11:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.100	0.0050	0.1	0	100	90	110				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102985

Date: *03-Oct-16*

Run ID :Run Order: **SFA-201-B_160926A: 12** SampType: **Method Blank** Lab ID: **MB-102985** Method: **SW9012**
Analysis Date: **09/26/16 10:15** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **SW9010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.05	0.05									

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-102985** Method: **SW9012**
Analysis Date: **09/26/16 10:18** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **SW9010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.64	0.25	4.998	0.05271	92	60	140				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 16** SampType: **Sample Matrix Spike** Lab ID: **B16091850-001AMS** Method: **SW9012**
Analysis Date: **09/26/16 10:26** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **SW9010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.25	0.25	4.784	0	89	50	150				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 17** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B16091850-001AMSD** Method: **SW9012**
Analysis Date: **09/26/16 10:28** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **SW9010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.20	0.25	4.802	0	87	50	150	4.246	1.1	30	

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SFA-201-B_160926A: 29** SampType: **Sample Matrix Spike** Lab ID: **B16091850-010AMS** Method: **SW9012**
Analysis Date: **09/26/16 11:06** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **SW9010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.76	0.25	5.04	0.06278	93	50	150				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102985

Date: *03-Oct-16*

Run ID :Run Order: **SFA-201-B_160926A: 30** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B16091850-010AMSD** Method: **SW9012**

Analysis Date: **09/26/16 11:09** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **SW9010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.75	0.25	4.972	0.06278	94	50	150	4.761	0.2	30	

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

Date: *03-Oct-16*

BatchID: 102988

Run ID :Run Order: **SPEC_160923B: 5** SampType: **Method Blank** Lab ID: **MB-102988** Method: **SW7196A**
Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	0.01									

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SPEC_160923B: 6** SampType: **Laboratory Control Sample** Lab ID: **LCS-102988** Method: **SW7196A**
Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.643	1.0	1	0	64	50	150				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SPEC_160923B: 16** SampType: **Sample Matrix Spike** Lab ID: **B16091850-009AMS** Method: **SW7196A**
Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.21	1.0	1	0.2042	100	70	130				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SPEC_160923B: 17** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B16091850-009AMSD** Method: **SW7196A**
Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.17	1.0	1	0.2042	97	70	130	1.208	3.0	20	

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SPEC_160923B: 19** SampType: **Sample Duplicate** Lab ID: **B16091850-010ADUP** Method: **SW7196A**
Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.487	1.0		0				0.432		30	

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102988

Date: *03-Oct-16*

Run ID :Run Order: **SPEC_160923B: 20** SampType: **Sample Matrix Spike** Lab ID: **B16091850-010APRESPIKEMS** Method: **SW7196A**

Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.30	1.0	1	0.432	87	70	130				

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Run ID :Run Order: **SPEC_160923B: 21** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B16091850-010APRESPIKEMSD** Method: **SW7196A**

Analysis Date: **09/23/16 16:15** Units: **mg/kg** **Prep Info:** Prep Date: **9/23/2016** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.04	1.0	1	0.432	60	70	130	1.3	23	20	SR

Associated samples: **B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **C37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **C37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	98.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.3	85	115			
Iron	0.49	0.020	0.5000	0	97.9	85	115			
Manganese	0.50	0.0020	0.5000	0	99.2	85	115			
Nickel	0.48	0.010	0.5000	0	96.3	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			
Zinc	0.48	0.010	0.5000	0	96.5	85	115			

Sample ID **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **C37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0020	0.002000	0	114	50	150			
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0020	0.0020	0.002000	0	98.5	50	150			J
Chromium	0.0051	0.0060	0.006000	0	84.5	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	112	50	150			
Iron	0.020	0.020	0.02000	0	102	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **C37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Nickel	0.0048	0.010	0.005000	0	96.4	50	150			J
Silver	0.0053	0.0050	0.005000	0	107	50	150			
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.0051	0.010	0.005000	0	102	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168337** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168344** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	98.0	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.49	0.020	0.5000	0	97.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.8	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0020	0.002000	0	135	50	150			
Beryllium	0.0020	0.0020	0.002000	0	99.0	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0053	0.0060	0.006000	0	87.7	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Nickel	0.0052	0.010	0.005000	0	105	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.0097	0.050	0.01000	0	96.6	50	150			J
Zinc	0.0049	0.010	0.005000	0	98.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **A37522**		RunNo: **37522**					
Prep Date:		Analysis Date: **9/27/2016**		SeqNo: **1167021**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	90.7	85	115			
Lead	0.012	0.00050	0.01250	0	92.4	85	115			
Selenium	0.023	0.0010	0.02500	0	91.1	85	115			

Sample ID	**LLLCS**	SampType: **LCSLL**		TestCode: **EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID: **A37522**		RunNo: **37522**					
Prep Date:		Analysis Date: **9/27/2016**		SeqNo: **1167023**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	100	50	150			
Lead	0.00049	0.00050	0.0005000	0	97.8	50	150			J
Selenium	0.00097	0.0010	0.001000	0	97.4	50	150			J

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID: **A37522**		RunNo: **37522**					
Prep Date:		Analysis Date: **9/27/2016**		SeqNo: **1167024**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **A37587**		RunNo: **37587**					
Prep Date:		Analysis Date: **9/29/2016**		SeqNo: **1169883**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.4	85	115			

Sample ID	**LCSLL**	SampType: **LCSLL**		TestCode: **EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID: **A37587**		RunNo: **37587**					
Prep Date:		Analysis Date: **9/29/2016**		SeqNo: **1169884**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00076	0.0010	0.001000	0	75.5	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A37587**	RunNo: **37587**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1169886** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B37425**	RunNo: **37425**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1163315** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	90.1	85	115			
Lead	0.012	0.00050	0.01250	0	93.2	85	115			
Selenium	0.023	0.0010	0.02500	0	90.3	85	115			

Sample ID **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B37425**	RunNo: **37425**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1163316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00067	0.0010	0.001000	0	66.5	50	150			J
Arsenic	0.00091	0.0010	0.001000	0	91.5	50	150			J
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00092	0.0010	0.001000	0	91.9	50	150			J

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B37425**	RunNo: **37425**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1163317** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1609B57-012FMS**	SampType:	**MS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**EB091916**	Batch ID:	**27692**	RunNo:	**37503**
Prep Date:	**9/26/2016**	Analysis Date:	**9/27/2016**	SeqNo:	**1166110** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0057	0.00020	0.005000	.00006867	112	75	125			

Sample ID	**1609B57-012FMSD**	SampType:	**MSD**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**EB091916**	Batch ID:	**27692**	RunNo:	**37503**
Prep Date:	**9/26/2016**	Analysis Date:	**9/27/2016**	SeqNo:	**1166111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0058	0.00020	0.005000	.00006867	115	75	125	2.35	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R37390**	RunNo:	**37390**					
Prep Date:		Analysis Date:	**9/21/2016**	SeqNo:	**1162083**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R37390**	RunNo:	**37390**					
Prep Date:		Analysis Date:	**9/21/2016**	SeqNo:	**1162084**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	9.9	0.50	10.00	0	98.7	90	110			

Sample ID	**1609B57-012EMS**	SampType:	**ms**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**EB091916**	Batch ID:	**R37390**	RunNo:	**37390**					
Prep Date:		Analysis Date:	**9/21/2016**	SeqNo:	**1162126**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	74.5	121			
Chloride	4.8	0.50	5.000	0.1061	93.4	81.9	117			
Sulfate	9.7	0.50	10.00	0	96.8	83	118			

Sample ID	**1609B57-012EMSD**	SampType:	**msd**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**EB091916**	Batch ID:	**R37390**	RunNo:	**37390**					
Prep Date:		Analysis Date:	**9/21/2016**	SeqNo:	**1162127**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	111	74.5	121	1.41	20	
Chloride	4.8	0.50	5.000	0.1061	94.3	81.9	117	0.932	20	
Sulfate	9.8	0.50	10.00	0	97.6	83	118	0.813	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-27652**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **27652**	RunNo: **37433**
Prep Date: **9/22/2016**	Analysis Date: **9/23/2016**	SeqNo: **1163639** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.4	62.6	124			
Surr: DNOP	4.0		5.000		79.7	70	130			

Sample ID **MB-27652**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **27652**	RunNo: **37433**
Prep Date: **9/22/2016**	Analysis Date: **9/23/2016**	SeqNo: **1163640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		94.0	70	130			

Sample ID **LCS-27685**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **27685**	RunNo: **37494**
Prep Date: **9/26/2016**	Analysis Date: **9/27/2016**	SeqNo: **1166208** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.7	62.6	124			
Surr: DNOP	4.5		5.000		90.9	70	130			

Sample ID **MB-27685**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **27685**	RunNo: **37494**
Prep Date: **9/26/2016**	Analysis Date: **9/27/2016**	SeqNo: **1166209** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		90.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **1609B57-012CMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **EB091916**	Batch ID: **27667**	RunNo: **37473**
Prep Date: **9/23/2016**	Analysis Date: **9/26/2016**	SeqNo: **1165386** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	115	79.6	148			
Surr: DNOP	0.55		0.5000		109	77.1	144			

Sample ID **1609B57-012CMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **EB091916**	Batch ID: **27667**	RunNo: **37473**
Prep Date: **9/23/2016**	Analysis Date: **9/26/2016**	SeqNo: **1165387** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	116	79.6	148	1.10	20	
Surr: DNOP	0.54		0.5000		107	77.1	144	0	0	

Sample ID **LCS-27667**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **27667**	RunNo: **37473**
Prep Date: **9/23/2016**	Analysis Date: **9/26/2016**	SeqNo: **1165395** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	110	63.2	155			
Surr: DNOP	0.53		0.5000		107	77.1	144			

Sample ID **MB-27667**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **27667**	RunNo: **37473**
Prep Date: **9/23/2016**	Analysis Date: **9/26/2016**	SeqNo: **1165396** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		108	77.1	144			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164933** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	70	130			
Toluene	0.96	0.050	1.000	0	96.0	70	130			
Chlorobenzene	0.93	0.050	1.000	0	93.2	70	130			
1,1-Dichloroethene	0.92	0.050	1.000	0	92.2	70	130			
Trichloroethene (TCE)	0.86	0.050	1.000	0	86.2	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.9	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164934** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	0.0048	0.050								J
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.028	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164934** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164934** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.50		0.5000		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.46		0.5000		92.2	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.5	70	130			

Sample ID **1609b57-004ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-24 (6-8')**	Batch ID: **S37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164936** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	15	0.36	14.59	0	104	49.2	155			
Toluene	14	0.73	14.59	0.2464	93.8	52	154			
Chlorobenzene	14	0.73	14.59	0	98.5	53.2	150			
1,1-Dichloroethene	14	0.73	14.59	0	94.8	34.2	163			
Trichloroethene (TCE)	13	0.73	14.59	0	92.5	48.2	151			
Surr: Dibromofluoromethane	7.5		7.294		103	70	130			
Surr: 1,2-Dichloroethane-d4	7.7		7.294		106	70	130			
Surr: Toluene-d8	6.8		7.294		92.6	70	130			
Surr: 4-Bromofluorobenzene	5.8		7.294		79.1	70	130			

Sample ID **1609b57-004amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-24 (6-8')**	Batch ID: **S37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164937** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	15	0.36	14.59	0	103	49.2	155	0.929	20	
Toluene	13	0.73	14.59	0.2464	87.1	52	154	7.26	20	
Chlorobenzene	13	0.73	14.59	0	91.0	53.2	150	7.91	20	
1,1-Dichloroethene	13	0.73	14.59	0	88.1	34.2	163	7.35	20	
Trichloroethene (TCE)	13	0.73	14.59	0	86.8	48.2	151	6.39	20	
Surr: Dibromofluoromethane	7.6		7.294		104	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	8.0		7.294		110	70	130	0	0	
Surr: Toluene-d8	6.7		7.294		91.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	5.9		7.294		80.2	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S37484**	RunNo: **37484**
Prep Date:	Analysis Date: **9/26/2016**	SeqNo: **1165573** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	111	70	130			
Toluene	0.99	0.050	1.000	0	98.5	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	107	70	130			
Trichloroethene (TCE)	0.91	0.050	1.000	0	91.1	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.3	70	130			
Surr: Toluene-d8	0.48		0.5000		95.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.3	70	130			

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37484**	RunNo: **37484**
Prep Date:	Analysis Date: **9/26/2016**	SeqNo: **1165574** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.022	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37484**	RunNo: **37484**
Prep Date:	Analysis Date: **9/26/2016**	SeqNo: **1165574** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37484**	RunNo: **37484**
Prep Date:	Analysis Date: **9/26/2016**	SeqNo: **1165574** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		101	70	130			
Surr: Toluene-d8	0.48		0.5000		95.5	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.1	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S37515**	RunNo: **37515**
Prep Date:	Analysis Date: **9/27/2016**	SeqNo: **1166836** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	116	70	130			
Toluene	0.95	0.050	1.000	0	94.9	70	130			
Chlorobenzene	0.92	0.050	1.000	0	92.4	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	106	70	130			
Trichloroethene (TCE)	0.97	0.050	1.000	0	97.3	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.46		0.5000		91.8	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.5	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37515**	RunNo: **37515**
Prep Date:	Analysis Date: **9/27/2016**	SeqNo: **1166837** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0051	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37515**	RunNo: **37515**
Prep Date:	Analysis Date: **9/27/2016**	SeqNo: **1166837** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.030	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S37515**	RunNo: **37515**
Prep Date:	Analysis Date: **9/27/2016**	SeqNo: **1166837** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.45		0.5000		89.1	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-27629**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **27629**	RunNo: **37389**
Prep Date: **9/21/2016**	Analysis Date: **9/21/2016**	SeqNo: **1162057** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.00								
Toluene	ND	2.00								
Ethylbenzene	ND	2.00								
Methyl tert-butyl ether (MTBE)	ND	2.00								
1,2,4-Trimethylbenzene	ND	2.00								
1,3,5-Trimethylbenzene	ND	2.00								
1,2-Dichloroethane (EDC)	ND	2.00								
1,2-Dibromoethane (EDB)	ND	2.00								
Naphthalene	ND	2.00								
1-Methylnaphthalene	0.360	4.00								J
2-Methylnaphthalene	ND	4.00								
Acetone	ND	10.0								
Bromobenzene	ND	2.00								
Bromodichloromethane	ND	2.00								
Bromoform	ND	2.00								
Bromomethane	ND	3.00								
2-Butanone	ND	10.0								
Carbon disulfide	ND	10.0								
Carbon tetrachloride	ND	2.00								
Chlorobenzene	ND	2.00								
Chloroethane	ND	2.00								
Chloroform	ND	2.00								
Chloromethane	ND	2.00								
2-Chlorotoluene	ND	2.00								
4-Chlorotoluene	ND	2.00								
cis-1,2-DCE	ND	2.00								
cis-1,3-Dichloropropene	ND	2.00								
1,2-Dibromo-3-chloropropane	ND	2.00								
Dibromochloromethane	ND	2.00								
Dibromomethane	ND	2.00								
1,2-Dichlorobenzene	ND	2.00								
1,3-Dichlorobenzene	ND	2.00								
1,4-Dichlorobenzene	ND	2.00								
Dichlorodifluoromethane	ND	2.00								
1,1-Dichloroethane	ND	2.00								
1,1-Dichloroethene	ND	2.00								
1,2-Dichloropropane	ND	2.00								
1,3-Dichloropropane	ND	2.00								
2,2-Dichloropropane	ND	2.00								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-27629**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **27629**	RunNo: **37389**
Prep Date: **9/21/2016**	Analysis Date: **9/21/2016**	SeqNo: **1162057** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	2.00								
Hexachlorobutadiene	ND	2.00								
2-Hexanone	ND	10.0								
Isopropylbenzene	ND	2.00								
4-Isopropyltoluene	ND	2.00								
4-Methyl-2-pentanone	ND	10.0								
Methylene chloride	ND	3.00								
n-Butylbenzene	ND	2.00								
n-Propylbenzene	ND	2.00								
sec-Butylbenzene	ND	2.00								
Styrene	0.320	2.00								J
tert-Butylbenzene	ND	2.00								
1,1,1,2-Tetrachloroethane	ND	2.00								
1,1,2,2-Tetrachloroethane	ND	2.00								
Tetrachloroethene (PCE)	ND	2.00								
trans-1,2-DCE	ND	2.00								
trans-1,3-Dichloropropene	ND	2.00								
1,2,3-Trichlorobenzene	ND	2.00								
1,2,4-Trichlorobenzene	ND	2.00								
1,1,1-Trichloroethane	ND	2.00								
1,1,2-Trichloroethane	ND	2.00								
Trichloroethene (TCE)	ND	2.00								
Trichlorofluoromethane	ND	2.00								
1,2,3-Trichloropropane	ND	2.00								
Vinyl chloride	ND	2.00								
Xylenes, Total	ND	2.00								
Surr: 1,2-Dichloroethane-d4	10.2		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10.2		10.00		102	70	130			
Surr: Dibromofluoromethane	10.1		10.00		101	70	130			
Surr: Toluene-d8	9.98		10.00		99.8	70	130			

Sample ID **LCS-27629**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **27629**	RunNo: **37389**
Prep Date: **9/21/2016**	Analysis Date: **9/21/2016**	SeqNo: **1162061** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	9.90	2.00	10.00	0	99.0	70	130			
Toluene	9.97	2.00	10.00	0	99.7	70	130			
Chlorobenzene	10.1	2.00	10.00	0	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-27629**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **27629**	RunNo: **37389**
Prep Date: **9/21/2016**	Analysis Date: **9/21/2016**	SeqNo: **1162061** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	9.83	2.00	10.00	0	98.3	68	129			
Trichloroethene (TCE)	9.94	2.00	10.00	0	99.4	70	130			
Surr: 1,2-Dichloroethane-d4	10.4		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10.2		10.00		102	70	130			
Surr: Dibromofluoromethane	10.3		10.00		103	70	130			
Surr: Toluene-d8	9.91		10.00		99.1	70	130			

Sample ID **LCSD-27629**	SampType: **LCSD**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS02**	Batch ID: **27629**	RunNo: **37389**
Prep Date: **9/21/2016**	Analysis Date: **9/21/2016**	SeqNo: **1162068** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.1	2.00	10.00	0	101	70	130	1.80	20	
Toluene	10.0	2.00	10.00	0	100	70	130	0.600	20	
Chlorobenzene	10.1	2.00	10.00	0	101	70	130	0.199	20	
1,1-Dichloroethene	9.92	2.00	10.00	0	99.2	68	129	0.911	20	
Trichloroethene (TCE)	10.0	2.00	10.00	0	100	70	130	0.802	20	
Surr: 1,2-Dichloroethane-d4	10.5		10.00		105	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130	0	0	
Surr: Dibromofluoromethane	10.2		10.00		102	70	130	0	0	
Surr: Toluene-d8	9.88		10.00		98.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **W37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164806** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	19	1.0	20.00	0	96.0	70	130			
Chlorobenzene	19	1.0	20.00	0	93.2	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	92.2	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.0	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164807** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.11	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.42	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	0.24	4.0								J
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	0.17	1.0								J
Chloroethane	0.27	2.0								J
Chloroform	ND	1.0								
Chloromethane	0.50	3.0								J
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164807** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	0.48	1.0								J
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164807** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.5	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.2		10.00		92.2	70	130			

Sample ID **1609b57-012ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB091916**	Batch ID: **W37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164930** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	95.9	70	130			
Chlorobenzene	19	1.0	20.00	0	96.6	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.7	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.4	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.6		10.00		96.0	70	130			

Sample ID **1609b57-012amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB091916**	Batch ID: **W37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164931** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130	2.78	20	
Toluene	18	1.0	20.00	0	92.0	70	130	4.12	20	
Chlorobenzene	18	1.0	20.00	0	90.3	70	130	6.82	20	
1,1-Dichloroethene	18	1.0	20.00	0	88.0	70	130	4.17	20	
Trichloroethene (TCE)	17	1.0	20.00	0	85.4	70	130	2.28	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		104	70	130	0	0	
Surr: Toluene-d8	9.5		10.00		95.3	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-27700**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **27700**	RunNo: **37545**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168037** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.11	0.50								J
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	0.077	0.40								J
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-27700**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **27700**	RunNo: **37545**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168037** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		77.4	35	97.9			
Surr: Phenol-d5	2.5		3.330		74.9	37.3	105			
Surr: 2,4,6-Tribromophenol	2.6		3.330		77.8	35.6	118			
Surr: Nitrobenzene-d5	1.0		1.670		62.6	41.2	107			
Surr: 2-Fluorobiphenyl	1.1		1.670		65.3	41.9	119			
Surr: 4-Terphenyl-d14	0.90		1.670		53.9	15	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-27700**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **LCSS**	Batch ID: **27700**	RunNo: **37577**							
Prep Date: **9/26/2016**	Analysis Date: **9/29/2016**	SeqNo: **1169435**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.7	0.20	1.670	0	99.8	45.8	99.8			S
4-Chloro-3-methylphenol	3.3	0.50	3.330	0	99.1	51.5	103			
2-Chlorophenol	3.2	0.20	3.330	0	96.3	46.5	105			
1,4-Dichlorobenzene	1.6	0.20	1.670	0	98.8	45.5	103			
2,4-Dinitrotoluene	1.6	0.50	1.670	0	92.9	36	87.2			S
N-Nitrosodi-n-propylamine	1.6	0.20	1.670	0	94.1	47.3	104			
4-Nitrophenol	3.1	0.25	3.330	0	93.5	47.3	95.3			
Pentachlorophenol	3.1	0.40	3.330	0	91.8	38.7	89.3			S
Phenol	3.5	0.20	3.330	0	105	47.8	106			
Pyrene	1.7	0.20	1.670	0	101	33.4	105			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	103	50.4	115			
Surr: 2-Fluorophenol	2.8		3.330		84.3	35	97.9			
Surr: Phenol-d5	3.0		3.330		91.3	37.3	105			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.2	35.6	118			
Surr: Nitrobenzene-d5	1.3		1.670		77.5	41.2	107			
Surr: 2-Fluorobiphenyl	1.3		1.670		78.5	41.9	119			
Surr: 4-Terphenyl-d14	1.2		1.670		68.9	15	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-27668**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	5.0	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	2.9	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-27668**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		58.5	15	123			
Surr: Phenol-d5	81		200.0		40.6	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.1	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		67.1	28.8	134			
Surr: 2-Fluorobiphenyl	52		100.0		52.4	35.9	125			
Surr: 4-Terphenyl-d14	64		100.0		64.2	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-27668**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168036** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	71.3	35	113			
4-Chloro-3-methylphenol	170	10	200.0	0	83.3	40.7	114			
2-Chlorophenol	150	10	200.0	0	72.9	37.6	113			
1,4-Dichlorobenzene	60	10	100.0	0	60.2	37.7	106			
2,4-Dinitrotoluene	71	10	100.0	0	70.6	37	91			
N-Nitrosodi-n-propylamine	79	10	100.0	0	78.8	45.4	105			
4-Nitrophenol	120	10	200.0	0	61.2	33.4	104			
Pentachlorophenol	140	20	200.0	0	68.9	29.5	94.9			
Phenol	120	10	200.0	0	62.3	30.6	119			
Pyrene	75	10	100.0	0	74.8	26.2	120			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.4	39.9	125			
Surr: 2-Fluorophenol	140		200.0		68.6	15	123			
Surr: Phenol-d5	120		200.0		60.9	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		80.3	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		66.7	28.8	134			
Surr: 2-Fluorobiphenyl	60		100.0		60.1	35.9	125			
Surr: 4-Terphenyl-d14	57		100.0		57.0	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-27711**	SampType: **MBLK**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID: **27711**		RunNo: **37501**					
Prep Date:	**9/26/2016**	Analysis Date: **9/27/2016**		SeqNo: **1166033**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-27711**	SampType: **LCS**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID: **27711**		RunNo: **37501**					
Prep Date:	**9/26/2016**	Analysis Date: **9/27/2016**		SeqNo: **1166034**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	105	80	120			

Sample ID	**1609B57-001BMS**	SampType: **MS**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**SWMU 10-23 (2-2.5')**	Batch ID: **27711**		RunNo: **37501**					
Prep Date:	**9/26/2016**	Analysis Date: **9/27/2016**		SeqNo: **1166036**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.21	0.037	0.1855	0.007182	108	75	125			

Sample ID	**1609B57-001BMSD**	SampType: **MSD**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**SWMU 10-23 (2-2.5')**	Batch ID: **27711**		RunNo: **37501**					
Prep Date:	**9/26/2016**	Analysis Date: **9/27/2016**		SeqNo: **1166037**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.20	0.037	0.1871	0.007182	104	75	125	2.51	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-27709**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **27709**	RunNo: **37544**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1167783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Manganese	0.066	0.10								J
Nickel	0.20	0.50								J
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								

Sample ID **LCS-27709**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **27709**	RunNo: **37544**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1167784** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	22	2.5	25.00	0	88.9	80	120			
Arsenic	21	2.5	25.00	0	82.9	80	120			
Barium	22	0.10	25.00	0	88.3	80	120			
Beryllium	23	0.15	25.00	0	90.1	80	120			
Cadmium	23	0.10	25.00	0	90.9	80	120			
Chromium	22	0.30	25.00	0	86.0	80	120			
Manganese	22	0.10	25.00	0	89.3	80	120			
Nickel	22	0.50	25.00	0	86.4	80	120			
Selenium	22	2.5	25.00	0	89.7	80	120			
Silver	4.7	0.25	5.000	0	93.2	80	120			
Vanadium	23	2.5	25.00	0	90.8	80	120			

Sample ID **MB-27709**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **27709**	RunNo: **37544**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1167951** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Zinc	0.39	2.5								J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-27709**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **27709**	RunNo: **37544**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1167952** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	23	0.30	25.00	0	92.8	80	120			
Iron	25	2.5	25.00	0	98.4	80	120			
Lead	23	0.25	25.00	0	91.8	80	120			
Zinc	23	2.5	25.00	0	93.0	80	120			

Sample ID **1609B57-001BMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-23 (2-2.5')**	Batch ID: **27709**	RunNo: **37544**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1167955** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	13	5.5	27.64	0	48.0	75	125			S
Arsenic	20	5.5	27.64	0	70.9	75	125			S
Barium	230	0.22	27.64	222.0	39.3	75	125			S
Beryllium	23	0.33	27.64	1.115	79.2	75	125			
Cadmium	23	0.22	27.64	0	83.2	75	125			
Chromium	36	0.66	27.64	14.41	78.1	75	125			
Cobalt	28	0.66	27.64	6.815	76.2	75	125			
Lead	23	0.55	27.64	2.558	72.9	75	125			S
Manganese	340	0.22	27.64	451.2	-407	75	125			S
Nickel	32	1.1	27.64	11.88	73.0	75	125			S
Selenium	17	5.5	27.64	0	60.5	75	125			S
Silver	4.5	0.55	5.528	0	81.4	75	125			
Vanadium	46	5.5	27.64	23.24	80.8	75	125			
Zinc	42	5.5	27.64	21.23	74.9	75	125			S

Sample ID **1609B57-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-23 (2-2.5')**	Batch ID: **27709**	RunNo: **37544**
Prep Date: **9/26/2016**	Analysis Date: **9/28/2016**	SeqNo: **1167956** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	13	5.6	28.07	0	48.1	75	125	1.72	20	S
Arsenic	22	5.6	28.07	0	78.8	75	125	12.1	20	
Barium	300	0.22	28.07	222.0	295	75	125	26.7	20	RS
Beryllium	25	0.34	28.07	1.115	83.5	75	125	6.49	20	
Cadmium	25	0.22	28.07	0	87.7	75	125	6.77	20	
Chromium	39	0.67	28.07	14.41	87.5	75	125	7.94	20	
Cobalt	30	0.67	28.07	6.815	82.9	75	125	7.59	20	
Lead	24	0.56	28.07	2.558	75.0	75	125	3.94	20	
Manganese	400	0.22	28.07	451.2	-195	75	125	15.7	20	S
Nickel	35	1.1	28.07	11.88	82.7	75	125	9.06	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**
19-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **1609B57-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-23 (2-2.5')** Batch ID: **27709** RunNo: **37544**
Prep Date: **9/26/2016** Analysis Date: **9/28/2016** SeqNo: **1167956** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	17	5.6	28.07	0	59.2	75	125	0.758	20	S
Silver	4.8	0.56	5.614	0	86.0	75	125	7.05	20	
Vanadium	49	5.6	28.07	23.24	92.5	75	125	7.68	20	
Zinc	45	5.6	28.07	21.23	86.2	75	125	8.03	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164944** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.9	62.9	123			
Surr: BFB	490		500.0		98.8	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164945** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	460		500.0		92.4	70	130			

Sample ID **1609B57-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-23 (2-2.5')**	Batch ID: **R37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164946** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.6	18.11	0.5795	90.6	52.3	132			
Surr: BFB	370		362.2		102	70	130			

Sample ID **1609B57-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-23 (2-2.5')**	Batch ID: **R37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164947** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.6	18.11	0.5795	85.4	52.3	132	5.70	20	
Surr: BFB	380		362.2		104	70	130	0	0	

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **G37576**	RunNo: **37576**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1169458** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	480		500.0		95.9	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G37576**	RunNo: **37576**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1169460** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**LCSS**	Batch ID:	**G37576**	RunNo:	**37576**
Prep Date:		Analysis Date:	**9/29/2016**	SeqNo:	**1169460** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.4	62.9	123			
Surr: BFB	510		500.0		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609B57**

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164962** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.9	75.4	118			
Surr: BFB	9.9		10.00		98.8	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164963** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.2		10.00		92.4	70	130			

Sample ID **1609B57-012BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB091916**	Batch ID: **G37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164964** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02660	86.8	53.8	128			
Surr: BFB	9.7		10.00		97.1	70	130			

Sample ID **1609B57-012BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB091916**	Batch ID: **G37464**	RunNo: **37464**
Prep Date:	Analysis Date: **9/23/2016**	SeqNo: **1164965** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0.02660	84.7	53.8	128	2.33	20	
Surr: BFB	10		10.00		103	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1609B57 RcptNo: 1

Received by/date: AJ 09/20/16

Logged By: Michelle Garcia 9/20/2016 4:17:00 PM Michelle Garcia

Completed By: Michelle Garcia 9/21/2016 11:07:18 AM Michelle Garcia

Reviewed By: AJ/JC 09/21/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 3 (1) (<2 or >12 unless noted)

Adjusted? NO

Checked by: LC

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
Email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package: Standard [X] Level 4 (Full Validation)
Accreditation: [X] NELAP [ ] Other
EDD (Type): EXCEL

Turn-Around Time: [ ] Standard [X] Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: [X] Yes [ ] No
Sample Temperature: 1.2°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609B57
9.16	1140	SOIL	SWMU 10-23(2-2.5')	JARS-3	NEAT	-001
				VIALS-2	MeOH	
				VIALS-2	SOBI	
	1155		SWMU 10-23(15-16')	JARS-3	NEAT	-002
				VIALS-2	MeOH	
				VIALS-2	SOBI	
	1255		SWMU 10-24(2-2.5')	JARS-3	NEAT	-003
				VIALS-2	MeOH	
				VIALS-2	SOBI	
	1310		SWMU 10-24(6-8')	JARS-3	NEAT	-004
				VIALS-2	MeOH	
				VIALS-2	SOBI	

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals & Cyanide (See attached list)			Air Bubbles (Y or N)
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					

Date	Time	Relinquished by:	Received by:	Date	Time
9/16	0630			9/20/16	215
9/20/16	1617			09/20/16	1617

Remarks: RUSH TAT

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package: Standard [X] Level 4 (Full Validation)
Accreditation: [X] NELAP [ ] Other
EDD (Type): EXCEL

Turn-Around Time: [ ] Standard [X] Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: [X] Yes [ ] No
Sample Temperature: 1.2°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609857	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED LIST)			Air Bubbles (Y or N)
9.16	1325	SOIL	SWMU 10-24 (8-10')	JARS-3	NEAT	-005			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MEOH											✓					
	↓	↓	↓	VIALS-2	SOBI											✓					
	1340		SWMU 10-24 (15-16')	JARS-3	NEAT	-006			✓							✓	✓	✓			
	↓		↓	VIALS-2	MEOH											✓					
	↓		↓	VIALS-2	SOBI											✓					
	1545		SWMU 10-25 (2-2.5')	JARS-3	NEAT	-007			✓							✓	✓	✓			
	↓		↓	VIALS-2	MEOH											✓					
	↓		↓	VIALS-2	SOBI											✓					
	1600		SWMU 10-25 (10-12')	JARS-3	NEAT	-008			✓							✓	✓	✓			
	↓		↓	VIALS-2	MEOH											✓					
↓	↓	↓	↓	VIALS-2	8081											✓					

Date	Time	Relinquished by:	Received by:	Date	Time
9/16	0630			9/20/16	25
9/16	1617			09/20/16	1617

Remarks: RUSH TAT

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Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client:	WESTERN REFINING SW, INC.
	GALLUP REFINERY
Mailing Address:	92 GIANT CROSSING RD
	GALLUP, NM 87301
Phone #:	505-722-0217
Email or Fax#:	
QA/QC Package:	Standard ☒ Level 4 (Full Validation)
Accreditation	NELAP ☐ Other
EDD (Type)	EXCEL

Turn-Around Time:	☐ Standard ☒ Rush
Project Name:	SWMU 10
Project #:	
Project Manager:	ED RIEGE
Sampler:	TRACY PAYNE
On Ice:	☑ Yes ☐ No
Sample Temperature:	1.2°C

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609B57	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED LIST)			Air Bubbles (Y or N)
9/16	1615	SOIL	SWMU 10-25(16.5-18')	JARS-3	NEAT	-009			✓							✓	✓	✓			
				VIALS-2	MEOH											✓					
	↓		↓	VIALS-2	SOBI											✓					
	—		SWMU 10 DUP01	JARS-3	NEAT	-010			✓							✓	✓	✓			
				VIALS-2	MEOH											✓					
↓	↓	↓	↓	VIALS-2	SOBI											✓					
9/16	—	—	MEOH BLANK	VIALS-2	MEOH	-011										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
9/16	0630			9/20/16	220	RUSH TAT
Date:	Time:	Relinquished by:	Received by:	Date	Time	
9/16	1617			09/20/16	1617	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
Email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package: Standard [X] Level 4 (Full Validation)
Accreditation: [X] NELAP [ ] Other
EDD (Type) EXCEL

Turn-Around Time: [X] Standard [ ] Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: [X] Yes [ ] No
Sample Temperature: 1.2°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609857	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals + Cyanide	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals (Total & Dissolved)	Gen Chem (See Attached List)		Air Bubbles (Y or N)
9/16	1645	WATER	EB091916	40 mL VOA-6	HCL	-012			✓							✓					
				1 L AMBER-1	NEAT												✓				
				250 mL AMBER-1	NEAT				✓												
				500 mL PLASTIC-1	HNO_3													✓			
				125 mL PLASTIC-1	HNO_3													✓			
				500 mL PLASTIC-1	NAOH								✓								
				500 mL PLASTIC-1	NEAT														✓		
✓	✓	✓	✓	125 mL PLASTIC-1	H_2SO_4														✓		

Date	Time	Relinquished by:	Received by:	Date	Time
9/16	1630			9/16/16	2:00
9/16	1617			09/20/16	1617

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

AND WATER QA/QC SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
~~Chromium VI~~	~~SW-846 Method 3060A~~
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

9/20/16

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 06, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1609C66

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-25-GW
Project: SWMU 10
Collection Date: 9/21/2016 8:50:00 AM
Lab ID: 1609C66-001
Matrix: AQUEOUS
Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE								Analyst: **TOM**
TPH-DRO	Diesel Range Organics (DRO)	20	0.69	1.0		mg/L	1	9/26/2016 4:19:48 PM
TPH-MRO	Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	9/26/2016 4:19:48 PM
117-84-0	Surr: DNOP	119		70-144		%Rec	1	9/26/2016 4:19:48 PM
EPA METHOD 300.0: ANIONS								Analyst: **MRA**
16984-48-8	Fluoride	ND	0.25	0.50		mg/L	5	9/22/2016 11:32:06 AM
16887-00-6	Chloride	1800	10	100		mg/L	200	9/26/2016 10:29:25 PM
14808-79-8	Sulfate	110	0.71	2.5		mg/L	5	9/22/2016 11:32:06 AM
EPA METHOD 200.7: DISSOLVED METALS								Analyst: **ELS**
7440-39-3	Barium	1.4	0.0066	0.010		mg/L	5	9/29/2016 10:02:57 AM
7440-41-7	Beryllium	ND	0.00031	0.0020		mg/L	1	9/29/2016 10:01:03 AM
7440-43-9	Cadmium	ND	0.00075	0.0020		mg/L	1	9/29/2016 10:01:03 AM
7440-47-3	Chromium	ND	0.0018	0.0060		mg/L	1	9/29/2016 10:01:03 AM
7440-48-4	Cobalt	0.0049	0.00074	0.0060	J	mg/L	1	9/29/2016 10:01:03 AM
7439-89-6	Iron	0.23	0.020	0.020		mg/L	1	9/29/2016 10:01:03 AM
7439-96-5	Manganese	2.1	0.0016	0.010	*	mg/L	5	9/29/2016 10:02:57 AM
7440-02-0	Nickel	0.076	0.0024	0.010		mg/L	1	9/29/2016 10:01:03 AM
7440-22-4	Silver	ND	0.0028	0.0050		mg/L	1	9/29/2016 10:01:03 AM
7440-62-2	Vanadium	0.0030	0.0013	0.050	J	mg/L	1	9/29/2016 10:01:03 AM
7440-66-6	Zinc	0.0049	0.0028	0.010	J	mg/L	1	9/29/2016 10:01:03 AM
EPA METHOD 200.7: METALS								Analyst: **ELS**
7440-39-3	Barium	1.1	0.0066	0.010		mg/L	5	10/4/2016 5:40:05 PM
7440-41-7	Beryllium	0.00043	0.00036	0.0020	J	mg/L	1	10/4/2016 5:38:13 PM
7440-43-9	Cadmium	ND	0.0015	0.0020		mg/L	1	10/4/2016 5:38:13 PM
7440-47-3	Chromium	ND	0.0027	0.0060		mg/L	1	10/4/2016 5:38:13 PM
7440-48-4	Cobalt	0.0033	0.0017	0.0060	J	mg/L	1	10/4/2016 5:38:13 PM
7439-89-6	Iron	1.9	0.10	0.10	*	mg/L	5	10/4/2016 5:40:05 PM
7439-96-5	Manganese	2.1	0.0016	0.010	*	mg/L	5	10/4/2016 5:40:05 PM
7440-02-0	Nickel	0.059	0.0031	0.010		mg/L	1	10/4/2016 5:38:13 PM
7440-22-4	Silver	ND	0.0028	0.0050		mg/L	1	10/4/2016 5:38:13 PM
7440-62-2	Vanadium	0.0068	0.0013	0.050	J	mg/L	1	10/4/2016 5:38:13 PM
7440-66-6	Zinc	0.0097	0.0027	0.010	J	mg/L	1	10/4/2016 5:38:13 PM
EPA 200.8: DISSOLVED METALS								Analyst: **JLF**
7440-36-0	Antimony	ND	0.0024	0.0050		mg/L	5	9/28/2016 5:28:10 PM
7440-38-2	Arsenic	0.017	0.00069	0.0050	*	mg/L	5	9/28/2016 5:28:10 PM
7439-92-1	Lead	ND	0.00017	0.00050		mg/L	1	9/28/2016 5:23:01 PM
7782-49-2	Selenium	0.039	0.0011	0.0050		mg/L	5	9/28/2016 5:28:10 PM
EPA 200.8: METALS								Analyst: **JLF**

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
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Project: SWMU 10
Collection Date: 9/21/2016 8:50:00 AM
Lab ID: 1609C66-001
Matrix: AQUEOUS
Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA 200.8: METALS								Analyst: **JLF**
7440-36-0	Antimony	0.00056	0.00047	0.0010	J	mg/L	1	10/3/2016 1:17:40 PM
7440-38-2	Arsenic	0.017	0.0011	0.0050	*	mg/L	5	10/3/2016 2:18:14 PM
7439-92-1	Lead	0.0021	0.00017	0.00050		mg/L	1	10/3/2016 1:17:40 PM
7782-49-2	Selenium	0.041	0.011	0.050	J	mg/L	50	10/3/2016 2:23:22 PM
EPA METHOD 245.1: MERCURY								Analyst: **pmf**
7439-97-6	Mercury	0.000085	0.000053	0.00020	J	mg/L	1	9/27/2016 3:40:17 PM
EPA METHOD 8270C: SEMIVOLATILES								Analyst: **DAM**
83-32-9	Acenaphthene	6.5	2.6	10	J	µg/L	1	9/28/2016 2:56:46 PM
208-96-8	Acenaphthylene	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
62-53-3	Aniline	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
120-12-7	Anthracene	ND	2.5	10		µg/L	1	9/28/2016 2:56:46 PM
103-33-3	Azobenzene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
56-55-3	Benz(a)anthracene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
50-32-8	Benzo(a)pyrene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
205-99-2	Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	9/28/2016 2:56:46 PM
191-24-2	Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
207-08-9	Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	9/28/2016 2:56:46 PM
65-85-0	Benzoic acid	ND	2.6	20		µg/L	1	9/28/2016 2:56:46 PM
100-51-6	Benzyl alcohol	ND	3.0	10		µg/L	1	9/28/2016 2:56:46 PM
111-91-1	Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	9/28/2016 2:56:46 PM
111-44-4	Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
108-60-1	Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	9/28/2016 2:56:46 PM
117-81-7	Bis(2-ethylhexyl)phthalate	2.8	2.6	10	J	µg/L	1	9/28/2016 2:56:46 PM
101-55-3	4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
85-68-7	Butyl benzyl phthalate	ND	2.5	10		µg/L	1	9/28/2016 2:56:46 PM
86-74-8	Carbazole	3.2	2.3	10	J	µg/L	1	9/28/2016 2:56:46 PM
59-50-7	4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
106-47-8	4-Chloroaniline	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
91-58-7	2-Chloronaphthalene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
95-57-8	2-Chlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:56:46 PM
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
218-01-9	Chrysene	ND	2.8	10		µg/L	1	9/28/2016 2:56:46 PM
84-74-2	Di-n-butyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
117-84-0	Di-n-octyl phthalate	ND	2.0	10		µg/L	1	9/28/2016 2:56:46 PM
53-70-3	Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
132-64-9	Dibenzofuran	ND	2.5	10		µg/L	1	9/28/2016 2:56:46 PM
95-50-1	1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
541-73-1	1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
106-46-7	1,4-Dichlorobenzene	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
91-94-1	3,3´-Dichlorobenzidine	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM

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CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES								Analyst: **DAM**
84-66-2	Diethyl phthalate	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
131-11-3	Dimethyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
120-83-2	2,4-Dichlorophenol	ND	2.3	20		µg/L	1	9/28/2016 2:56:46 PM
105-67-9	2,4-Dimethylphenol	1100	60	200		µg/L	20	9/29/2016 8:44:29 PM
534-52-1	4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	9/28/2016 2:56:46 PM
51-28-5	2,4-Dinitrophenol	ND	2.8	20		µg/L	1	9/28/2016 2:56:46 PM
121-14-2	2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	9/28/2016 2:56:46 PM
606-20-2	2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
206-44-0	Fluoranthene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
86-73-7	Fluorene	8.7	2.7	10	J	µg/L	1	9/28/2016 2:56:46 PM
118-74-1	Hexachlorobenzene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
87-68-3	Hexachlorobutadiene	ND	2.2	10		µg/L	1	9/28/2016 2:56:46 PM
77-47-4	Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
67-72-1	Hexachloroethane	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
193-39-5	Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	9/28/2016 2:56:46 PM
78-59-1	Isophorone	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
90-12-0	1-Methylnaphthalene	120	2.9	10		µg/L	1	9/28/2016 2:56:46 PM
91-57-6	2-Methylnaphthalene	180	2.9	10		µg/L	1	9/28/2016 2:56:46 PM
95-48-7	2-Methylphenol	2600	51	200		µg/L	20	9/29/2016 8:44:29 PM
65794-96-9	3+4-Methylphenol	6.2	2.3	10	J	µg/L	1	9/28/2016 2:56:46 PM
621-64-7	N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
62-75-9	N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	9/28/2016 2:56:46 PM
86-30-6	N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
91-20-3	Naphthalene	170	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
88-74-4	2-Nitroaniline	ND	2.8	10		µg/L	1	9/28/2016 2:56:46 PM
99-09-2	3-Nitroaniline	ND	2.9	10		µg/L	1	9/28/2016 2:56:46 PM
100-01-6	4-Nitroaniline	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
98-95-3	Nitrobenzene	ND	2.8	10		µg/L	1	9/28/2016 2:56:46 PM
88-75-5	2-Nitrophenol	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
100-02-7	4-Nitrophenol	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
87-86-5	Pentachlorophenol	ND	2.3	20		µg/L	1	9/28/2016 2:56:46 PM
85-01-8	Phenanthrene	5.7	2.6	10	J	µg/L	1	9/28/2016 2:56:46 PM
108-95-2	Phenol	ND	2.0	10		µg/L	1	9/28/2016 2:56:46 PM
129-00-0	Pyrene	ND	3.1	10		µg/L	1	9/28/2016 2:56:46 PM
110-86-1	Pyridine	ND	2.2	10		µg/L	1	9/28/2016 2:56:46 PM
120-82-1	1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
95-95-4	2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:56:46 PM
88-06-2	2,4,6-Trichlorophenol	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
367-12-4	Surr: 2-Fluorophenol	27.4	0	15-123		%Rec	1	9/28/2016 2:56:46 PM
4165-62-2	Surr: Phenol-d5	30.6	0	15-124		%Rec	1	9/28/2016 2:56:46 PM
118-79-6	Surr: 2,4,6-Tribromophenol	50.6	0	18.4-134		%Rec	1	9/28/2016 2:56:46 PM
4165-60-0	Surr: Nitrobenzene-d5	56.4	0	18.8-134		%Rec	1	9/28/2016 2:56:46 PM

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Project: SWMU 10
Collection Date: 9/21/2016 8:50:00 AM
Lab ID: 1609C66-001
Matrix: AQUEOUS
Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES								Analyst: **DAM**
321-60-8	Surr: 2-Fluorobiphenyl	52.8	0	15.9-125		%Rec	1	9/28/2016 2:56:46 PM
1718-51-0	Surr: 4-Terphenyl-d14	56.1	0	15-146		%Rec	1	9/28/2016 2:56:46 PM
EPA METHOD 8260B: VOLATILES								Analyst: **AG**
71-43-2	Benzene	320	4.8	50		µg/L	50	9/22/2016 6:04:01 PM
108-88-3	Toluene	140	5.9	50		µg/L	50	9/22/2016 6:04:01 PM
100-41-4	Ethylbenzene	200	5.6	50		µg/L	50	9/22/2016 6:04:01 PM
1634-04-4	Methyl tert-butyl ether (MTBE)	17	11	50	J	µg/L	50	9/22/2016 6:04:01 PM
95-63-6	1,2,4-Trimethylbenzene	170	5.5	50		µg/L	50	9/22/2016 6:04:01 PM
108-67-8	1,3,5-Trimethylbenzene	46	5.8	50	J	µg/L	50	9/22/2016 6:04:01 PM
107-06-2	1,2-Dichloroethane (EDC)	ND	5.8	50		µg/L	50	9/22/2016 6:04:01 PM
106-93-4	1,2-Dibromoethane (EDB)	ND	5.6	50		µg/L	50	9/22/2016 6:04:01 PM
91-20-3	Naphthalene	200	4.6	100		µg/L	50	9/22/2016 6:04:01 PM
90-12-0	1-Methylnaphthalene	110	10	200	J	µg/L	50	9/22/2016 6:04:01 PM
91-57-6	2-Methylnaphthalene	140	7.9	200	J	µg/L	50	9/22/2016 6:04:01 PM
67-64-1	Acetone	ND	250	500		µg/L	50	9/22/2016 6:04:01 PM
108-86-1	Bromobenzene	ND	4.9	50		µg/L	50	9/22/2016 6:04:01 PM
75-27-4	Bromodichloromethane	ND	7.0	50		µg/L	50	9/22/2016 6:04:01 PM
75-25-2	Bromoform	ND	5.1	50		µg/L	50	9/22/2016 6:04:01 PM
74-83-9	Bromomethane	ND	39	150		µg/L	50	9/22/2016 6:04:01 PM
78-93-3	2-Butanone	ND	37	500		µg/L	50	9/22/2016 6:04:01 PM
75-15-0	Carbon disulfide	ND	30	500		µg/L	50	9/22/2016 6:04:01 PM
56-23-5	Carbon Tetrachloride	ND	5.4	50		µg/L	50	9/22/2016 6:04:01 PM
108-90-7	Chlorobenzene	ND	5.7	50		µg/L	50	9/22/2016 6:04:01 PM
75-00-3	Chloroethane	ND	9.6	100		µg/L	50	9/22/2016 6:04:01 PM
67-66-3	Chloroform	ND	4.4	50		µg/L	50	9/22/2016 6:04:01 PM
74-87-3	Chloromethane	ND	11	150		µg/L	50	9/22/2016 6:04:01 PM
95-49-8	2-Chlorotoluene	ND	20	50		µg/L	50	9/22/2016 6:04:01 PM
106-43-4	4-Chlorotoluene	ND	6.4	50		µg/L	50	9/22/2016 6:04:01 PM
156-59-2	cis-1,2-DCE	ND	6.2	50		µg/L	50	9/22/2016 6:04:01 PM
10061-01-5	cis-1,3-Dichloropropene	ND	5.3	50		µg/L	50	9/22/2016 6:04:01 PM
96-12-8	1,2-Dibromo-3-chloropropane	ND	12	100		µg/L	50	9/22/2016 6:04:01 PM
124-48-1	Dibromochloromethane	ND	4.3	50		µg/L	50	9/22/2016 6:04:01 PM
74-95-3	Dibromomethane	ND	6.0	50		µg/L	50	9/22/2016 6:04:01 PM
95-50-1	1,2-Dichlorobenzene	ND	20	50		µg/L	50	9/22/2016 6:04:01 PM
541-73-1	1,3-Dichlorobenzene	ND	7.2	50		µg/L	50	9/22/2016 6:04:01 PM
106-46-7	1,4-Dichlorobenzene	ND	7.1	50		µg/L	50	9/22/2016 6:04:01 PM
75-71-8	Dichlorodifluoromethane	ND	18	50		µg/L	50	9/22/2016 6:04:01 PM
75-34-3	1,1-Dichloroethane	ND	5.4	50		µg/L	50	9/22/2016 6:04:01 PM
75-35-4	1,1-Dichloroethene	ND	5.4	50		µg/L	50	9/22/2016 6:04:01 PM
78-87-5	1,2-Dichloropropane	ND	5.5	50		µg/L	50	9/22/2016 6:04:01 PM
142-28-9	1,3-Dichloropropane	ND	7.8	50		µg/L	50	9/22/2016 6:04:01 PM

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CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES								Analyst: **AG**
594-20-7	2,2-Dichloropropane	ND	8.3	100		µg/L	50	9/22/2016 6:04:01 PM
563-58-6	1,1-Dichloropropene	ND	6.7	50		µg/L	50	9/22/2016 6:04:01 PM
87-68-3	Hexachlorobutadiene	ND	9.9	50		µg/L	50	9/22/2016 6:04:01 PM
591-78-6	2-Hexanone	ND	42	500		µg/L	50	9/22/2016 6:04:01 PM
98-82-8	Isopropylbenzene	24	5.2	50	J	µg/L	50	9/22/2016 6:04:01 PM
99-87-6	4-Isopropyltoluene	ND	7.0	50		µg/L	50	9/22/2016 6:04:01 PM
108-10-1	4-Methyl-2-pentanone	ND	21	500		µg/L	50	9/22/2016 6:04:01 PM
75-09-2	Methylene Chloride	ND	9.4	150		µg/L	50	9/22/2016 6:04:01 PM
104-51-8	n-Butylbenzene	ND	8.0	150		µg/L	50	9/22/2016 6:04:01 PM
103-65-1	n-Propylbenzene	30	6.6	50	J	µg/L	50	9/22/2016 6:04:01 PM
135-98-8	sec-Butylbenzene	12	6.2	50	J	µg/L	50	9/22/2016 6:04:01 PM
100-42-5	Styrene	ND	5.5	50		µg/L	50	9/22/2016 6:04:01 PM
98-06-6	tert-Butylbenzene	ND	5.8	50		µg/L	50	9/22/2016 6:04:01 PM
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.6	50		µg/L	50	9/22/2016 6:04:01 PM
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.4	100		µg/L	50	9/22/2016 6:04:01 PM
127-18-4	Tetrachloroethene (PCE)	ND	7.6	50		µg/L	50	9/22/2016 6:04:01 PM
156-60-5	trans-1,2-DCE	ND	20	50		µg/L	50	9/22/2016 6:04:01 PM
10061-02-6	trans-1,3-Dichloropropene	ND	5.2	50		µg/L	50	9/22/2016 6:04:01 PM
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	50		µg/L	50	9/22/2016 6:04:01 PM
120-82-1	1,2,4-Trichlorobenzene	ND	6.6	50		µg/L	50	9/22/2016 6:04:01 PM
71-55-6	1,1,1-Trichloroethane	ND	4.6	50		µg/L	50	9/22/2016 6:04:01 PM
79-00-5	1,1,2-Trichloroethane	ND	6.4	50		µg/L	50	9/22/2016 6:04:01 PM
79-01-6	Trichloroethene (TCE)	ND	8.8	50		µg/L	50	9/22/2016 6:04:01 PM
75-69-4	Trichlorofluoromethane	ND	10	50		µg/L	50	9/22/2016 6:04:01 PM
96-18-4	1,2,3-Trichloropropane	ND	10	100		µg/L	50	9/22/2016 6:04:01 PM
75-01-4	Vinyl chloride	ND	9.8	50		µg/L	50	9/22/2016 6:04:01 PM
1330-20-7	Xylenes, Total	1200	18	75		µg/L	50	9/22/2016 6:04:01 PM
17060-07-0	Surr: 1,2-Dichloroethane-d4	92.9	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
460-00-4	Surr: 4-Bromofluorobenzene	96.1	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
1868-53-7	Surr: Dibromofluoromethane	82.4	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
2037-26-5	Surr: Toluene-d8	100	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
EPA METHOD 8015D: GASOLINE RANGE								Analyst: **AG**
TPH-GRO	Gasoline Range Organics (GRO)	8.6	0.75	2.5		mg/L	50	9/22/2016 6:04:01 PM
460-00-4	Surr: BFB	104	0	70-130		%Rec	50	9/22/2016 6:04:01 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1609C66-002
Matrix: AQUEOUS
Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES								Analyst: **AG**
71-43-2	Benzene	ND	0.096	1.0		µg/L	1	9/22/2016 6:32:49 PM
108-88-3	Toluene	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
100-41-4	Ethylbenzene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
1634-04-4	Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	9/22/2016 6:32:49 PM
95-63-6	1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
108-67-8	1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
107-06-2	1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
106-93-4	1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
91-20-3	Naphthalene	ND	0.093	2.0		µg/L	1	9/22/2016 6:32:49 PM
90-12-0	1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	9/22/2016 6:32:49 PM
91-57-6	2-Methylnaphthalene	ND	0.16	4.0		µg/L	1	9/22/2016 6:32:49 PM
67-64-1	Acetone	ND	4.9	10		µg/L	1	9/22/2016 6:32:49 PM
108-86-1	Bromobenzene	ND	0.098	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-27-4	Bromodichloromethane	ND	0.14	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-25-2	Bromoform	ND	0.10	1.0		µg/L	1	9/22/2016 6:32:49 PM
74-83-9	Bromomethane	ND	0.78	3.0		µg/L	1	9/22/2016 6:32:49 PM
78-93-3	2-Butanone	ND	0.74	10		µg/L	1	9/22/2016 6:32:49 PM
75-15-0	Carbon disulfide	ND	0.60	10		µg/L	1	9/22/2016 6:32:49 PM
56-23-5	Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
108-90-7	Chlorobenzene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-00-3	Chloroethane	ND	0.19	2.0		µg/L	1	9/22/2016 6:32:49 PM
67-66-3	Chloroform	ND	0.089	1.0		µg/L	1	9/22/2016 6:32:49 PM
74-87-3	Chloromethane	ND	0.21	3.0		µg/L	1	9/22/2016 6:32:49 PM
95-49-8	2-Chlorotoluene	ND	0.40	1.0		µg/L	1	9/22/2016 6:32:49 PM
106-43-4	4-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/22/2016 6:32:49 PM
156-59-2	cis-1,2-DCE	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
10061-01-5	cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	9/22/2016 6:32:49 PM
124-48-1	Dibromochloromethane	ND	0.087	1.0		µg/L	1	9/22/2016 6:32:49 PM
74-95-3	Dibromomethane	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
95-50-1	1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	9/22/2016 6:32:49 PM
541-73-1	1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	9/22/2016 6:32:49 PM
106-46-7	1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-71-8	Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-34-3	1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-35-4	1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
78-87-5	1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
142-28-9	1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	9/22/2016 6:32:49 PM
594-20-7	2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	9/22/2016 6:32:49 PM
563-58-6	1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	9/22/2016 6:32:49 PM
87-68-3	Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	9/22/2016 6:32:49 PM
591-78-6	2-Hexanone	ND	0.84	10		µg/L	1	9/22/2016 6:32:49 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1609C66-002
Matrix: AQUEOUS
Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES								Analyst: **AG**
98-82-8	Isopropylbenzene	ND	0.10	1.0		µg/L	1	9/22/2016 6:32:49 PM
99-87-6	4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	9/22/2016 6:32:49 PM
108-10-1	4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	9/22/2016 6:32:49 PM
75-09-2	Methylene Chloride	ND	0.19	3.0		µg/L	1	9/22/2016 6:32:49 PM
104-51-8	n-Butylbenzene	ND	0.16	3.0		µg/L	1	9/22/2016 6:32:49 PM
103-65-1	n-Propylbenzene	ND	0.13	1.0		µg/L	1	9/22/2016 6:32:49 PM
135-98-8	sec-Butylbenzene	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
100-42-5	Styrene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
98-06-6	tert-Butylbenzene	ND	0.12	1.0		µg/L	1	9/22/2016 6:32:49 PM
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	9/22/2016 6:32:49 PM
127-18-4	Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	9/22/2016 6:32:49 PM
156-60-5	trans-1,2-DCE	ND	0.40	1.0		µg/L	1	9/22/2016 6:32:49 PM
10061-02-6	trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	9/22/2016 6:32:49 PM
87-61-6	1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	9/22/2016 6:32:49 PM
120-82-1	1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	9/22/2016 6:32:49 PM
71-55-6	1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	9/22/2016 6:32:49 PM
79-00-5	1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	9/22/2016 6:32:49 PM
79-01-6	Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	9/22/2016 6:32:49 PM
75-69-4	Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	9/22/2016 6:32:49 PM
96-18-4	1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	9/22/2016 6:32:49 PM
75-01-4	Vinyl chloride	ND	0.20	1.0		µg/L	1	9/22/2016 6:32:49 PM
1330-20-7	Xylenes, Total	ND	0.37	1.5		µg/L	1	9/22/2016 6:32:49 PM
17060-07-0	Surr: 1,2-Dichloroethane-d4	95.5	0	70-130		%Rec	1	9/22/2016 6:32:49 PM
460-00-4	Surr: 4-Bromofluorobenzene	99.6	0	70-130		%Rec	1	9/22/2016 6:32:49 PM
1868-53-7	Surr: Dibromofluoromethane	97.4	0	70-130		%Rec	1	9/22/2016 6:32:49 PM
2037-26-5	Surr: Toluene-d8	100	0	70-130		%Rec	1	9/22/2016 6:32:49 PM
EPA METHOD 8015D: GASOLINE RANGE								Analyst: **AG**
TPH-GRO	Gasoline Range Organics (GRO)	0.018	0.015	0.050	J	mg/L	1	9/22/2016 6:32:49 PM
460-00-4	Surr: BFB	103	0	70-130		%Rec	1	9/22/2016 6:32:49 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	09/28/2016 11:43	WG911779

Wet Chemistry by Method D 7511-09e2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	0.143		0.00500	1	09/26/2016 19:48	WG911531

Method Blank (MB)

(MB) R3166742-1 09/28/16 10:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L861521-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861521-01 09/28/16 11:26 • (DUP) R3166742-4 09/28/16 11:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Hexavalent Chromium	U	ND	1	0.000		20

L862074-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862074-02 09/28/16 14:11 • (DUP) R3166742-7 09/28/16 14:19

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166742-2 09/28/16 10:33 • (LCSD) R3166742-3 09/28/16 10:41

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00199	0.00198	100	99.0	90.0-110			0.000	20

L861789-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861789-01 09/28/16 12:21 • (MS) R3166742-5 09/28/16 12:29 • (MSD) R3166742-6 09/28/16 12:38

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0502	0.0512	100	102	1	90.0-110			2.00	20

Method Blank (MB)

(MB) R3166228-2 09/26/16 17:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Cyanide	U		0.0012	0.00500

L861341-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861341-01 09/26/16 19:09 • (DUP) R3166228-7 09/26/16 19:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Cyanide	ND	0.000	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166228-3 09/26/16 17:57 • (LCSD) R3166228-4 09/26/16 18:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Cyanide	0.0500	0.0550	0.0530	110	106	84-116			4	20

L86´220-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861220-02 09/26/16 18:18 • (MS) R3166228-5 09/26/16 18:30 • (MSD) R3166228-6 09/26/16 18:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Cyanide	0.100	ND	0.0720	0.0730	72	73	1	64-136			1	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-27858**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**27858**	RunNo:	**37678**					
Prep Date:	**10/3/2016**	Analysis Date:	**10/4/2016**	SeqNo:	**1173403**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	0.00066	0.0020								J
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-27858**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**27858**	RunNo:	**37678**					
Prep Date:	**10/3/2016**	Analysis Date:	**10/4/2016**	SeqNo:	**1173404**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.1	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	99.0	85	115			
Chromium	0.49	0.0060	0.5000	0	97.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Iron	0.49	0.020	0.5000	0	98.9	85	115			
Manganese	0.49	0.0020	0.5000	0	97.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.2	85	115			
Silver	0.095	0.0050	0.1000	0	95.0	85	115			
Vanadium	0.51	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	99.0	85	115			

Sample ID	**LLLCS-27858**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**BatchQC**	Batch ID:	**27858**	RunNo:	**37678**					
Prep Date:	**10/3/2016**	Analysis Date:	**10/4/2016**	SeqNo:	**1173405**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	111	50	150			
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Cadmium	0.0020	0.0020	0.002000	0	99.5	50	150			J
Chromium	0.0065	0.0060	0.006000	0	108	50	150			
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Iron	0.026	0.020	0.02000	0	132	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**
06-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID	**LLLCS-27858**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**BatchQC**	Batch ID:	**27858**	RunNo:	**37678**					
Prep Date:	**10/3/2016**	Analysis Date:	**10/4/2016**	SeqNo:	**1173405**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Nickel	0.0046	0.010	0.005000	0	92.8	50	150			J
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.0052	0.010	0.005000	0	105	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168337** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168344** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	98.0	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.49	0.020	0.5000	0	97.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.8	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0020	0.002000	0	135	50	150			
Beryllium	0.0020	0.0020	0.002000	0	99.0	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0053	0.0060	0.006000	0	87.7	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B37552**	RunNo: **37552**
Prep Date:	Analysis Date: **9/29/2016**	SeqNo: **1168346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Nickel	0.0052	0.010	0.005000	0	105	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.0097	0.050	0.01000	0	96.6	50	150			J
Zinc	0.0049	0.010	0.005000	0	98.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-27815**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**27815**	RunNo:	**37638**					
Prep Date:	**9/30/2016**	Analysis Date:	**10/3/2016**	SeqNo:	**1171503**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MSLCS-27815**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**27815**	RunNo:	**37638**					
Prep Date:	**9/30/2016**	Analysis Date:	**10/3/2016**	SeqNo:	**1171504**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.8	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID	**MSLLLCS-27815**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID:	**27815**	RunNo:	**37638**					
Prep Date:	**9/30/2016**	Analysis Date:	**10/3/2016**	SeqNo:	**1171505**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	103	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00050	0.00050	0.0005000	0	101	50	150			
Selenium	0.0010	0.0010	0.001000	0	101	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**B37537**	RunNo:	**37537**					
Prep Date:		Analysis Date:	**9/28/2016**	SeqNo:	**1168521**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.5	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	97.5	85	115			

Sample ID	**LLLCS**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**BatchQC**	Batch ID:	**B37537**	RunNo:	**37537**					
Prep Date:		Analysis Date:	**9/28/2016**	SeqNo:	**1168522**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00098	0.0010	0.001000	0	98.4	50	150			J

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**B37537**	RunNo:	**37537**					
Prep Date:		Analysis Date:	**9/28/2016**	SeqNo:	**1168523**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00070	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R37435**	RunNo:	**37435**					
Prep Date:		Analysis Date:	**9/22/2016**	SeqNo:	**1163735**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R37435**	RunNo:	**37435**					
Prep Date:		Analysis Date:	**9/22/2016**	SeqNo:	**1163736**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID	**1609C66-001EMS**	SampType:	**ms**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**SWMU 10-25-GW**	Batch ID:	**R37435**	RunNo:	**37435**					
Prep Date:		Analysis Date:	**9/22/2016**	SeqNo:	**1163742**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	160	2.5	50.00	106.8	108	83	118			

Sample ID	**1609C66-001EMSD**	SampType:	**msd**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**SWMU 10-25-GW**	Batch ID:	**R37435**	RunNo:	**37435**					
Prep Date:		Analysis Date:	**9/22/2016**	SeqNo:	**1163743**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	170	2.5	50.00	106.8	117	83	118	2.58	20	

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R37487**	RunNo:	**37487**					
Prep Date:		Analysis Date:	**9/26/2016**	SeqNo:	**1165787**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	**LCS**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R37487**	RunNo:	**37487**					
Prep Date:		Analysis Date:	**9/26/2016**	SeqNo:	**1165788**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	97.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-27667**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range**				
Client ID:	**LCSW**	Batch ID:	**27667**		RunNo:	**37473**				
Prep Date:	**9/23/2016**	Analysis Date:	**9/26/2016**		SeqNo:	**1165395**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	110	63.2	155			
Surr: DNOP	0.53		0.5000		107	77.1	144			

Sample ID	**MB-27667**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range**				
Client ID:	**PBW**	Batch ID:	**27667**		RunNo:	**37473**				
Prep Date:	**9/23/2016**	Analysis Date:	**9/26/2016**		SeqNo:	**1165396**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		108	77.1	144			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **W37409**	RunNo: **37409**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1162560** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	19	1.0	20.00	0	95.8	70	130			
Chlorobenzene	19	1.0	20.00	0	95.6	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.4	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	9.7		10.00		97.5	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W37409**	RunNo: **37409**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1162561** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**
06-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W37409**	RunNo: **37409**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1162561** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**
06-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **W37409**	RunNo: **37409**
Prep Date:	Analysis Date: **9/22/2016**	SeqNo: **1162561** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.5		10.00		95.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **1609c66-001dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-25-GW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168031** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	58	10	100.0	6.480	51.1	27.6	123			
4-Chloro-3-methylphenol	130	10	200.0	0	62.8	29.3	126			
2-Chlorophenol	100	10	200.0	0	51.2	15	133			
1,4-Dichlorobenzene	38	10	100.0	0	37.7	17.6	127			
2,4-Dinitrotoluene	56	10	100.0	0	55.8	38.9	98.5			
N-Nitrosodi-n-propylamine	64	10	100.0	0	63.8	25.9	131			
4-Nitrophenol	33	10	200.0	0	16.4	15	102			
Pentachlorophenol	75	20	200.0	0	37.6	15	120			
Phenol	65	10	200.0	0	32.6	15	100			
Pyrene	60	10	100.0	0	59.5	22.8	126			
1,2,4-Trichlorobenzene	41	10	100.0	0	41.0	15	143			
Surr: 2-Fluorophenol	49		200.0		24.7	15	123			
Surr: Phenol-d5	58		200.0		28.8	4.13	124			
Surr: 2,4,6-Tribromophenol	95		200.0		47.6	18.4	134			
Surr: Nitrobenzene-d5	49		100.0		48.8	28.8	134			
Surr: 2-Fluorobiphenyl	43		100.0		43.2	35.9	125			
Surr: 4-Terphenyl-d14	49		100.0		48.8	15	146			

Sample ID **1609c66-001dmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-25-GW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168032** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	54	10	100.0	6.480	47.4	27.6	123	6.60	31.3	
4-Chloro-3-methylphenol	110	10	200.0	0	55.1	29.3	126	13.1	29	
2-Chlorophenol	90	10	200.0	0	44.8	15	133	13.5	28.4	
1,4-Dichlorobenzene	36	10	100.0	0	36.3	17.6	127	3.89	28.2	
2,4-Dinitrotoluene	49	10	100.0	0	48.6	38.9	98.5	13.8	22.9	
N-Nitrosodi-n-propylamine	59	10	100.0	0	58.7	25.9	131	8.30	28.8	
4-Nitrophenol	18	10	200.0	0	9.01	15	102	58.3	41.5	RS
Pentachlorophenol	46	20	200.0	0	23.0	15	120	47.9	45.1	R
Phenol	55	10	200.0	0	27.5	15	100	17.1	33.9	
Pyrene	56	10	100.0	0	56.4	22.8	126	5.49	33.6	
1,2,4-Trichlorobenzene	38	10	100.0	0	38.4	15	143	6.50	28.2	
Surr: 2-Fluorophenol	33		200.0		16.3	15	123	0	0	
Surr: Phenol-d5	51		200.0		25.7	4.13	124	0	0	
Surr: 2,4,6-Tribromophenol	77		200.0		38.6	18.4	134	0	0	
Surr: Nitrobenzene-d5	46		100.0		45.6	28.8	134	0	0	
Surr: 2-Fluorobiphenyl	37		100.0		37.3	35.9	125	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**
06-Oct-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **1609c66-001dmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-25-GW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168032** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	46		100.0		45.9	15	146	0	0	

Sample ID **mb-27668**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	5.0	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	2.9	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-27668**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-27668**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168035** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	120		200.0		58.5	15	123			
Surr: Phenol-d5	81		200.0		40.6	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.1	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		67.1	28.8	134			
Surr: 2-Fluorobiphenyl	52		100.0		52.4	35.9	125			
Surr: 4-Terphenyl-d14	64		100.0		64.2	15	146			

Sample ID **lcs-27668**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **27668**	RunNo: **37545**
Prep Date: **9/23/2016**	Analysis Date: **9/28/2016**	SeqNo: **1168036** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	71.3	35	113			
4-Chloro-3-methylphenol	170	10	200.0	0	83.3	40.7	114			
2-Chlorophenol	150	10	200.0	0	72.9	37.6	113			
1,4-Dichlorobenzene	60	10	100.0	0	60.2	37.7	106			
2,4-Dinitrotoluene	71	10	100.0	0	70.6	37	91			
N-Nitrosodi-n-propylamine	79	10	100.0	0	78.8	45.4	105			
4-Nitrophenol	120	10	200.0	0	61.2	33.4	104			
Pentachlorophenol	140	20	200.0	0	68.9	29.5	94.9			
Phenol	120	10	200.0	0	62.3	30.6	119			
Pyrene	75	10	100.0	0	74.8	26.2	120			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.4	39.9	125			
Surr: 2-Fluorophenol	140		200.0		68.6	15	123			
Surr: Phenol-d5	120		200.0		60.9	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		80.3	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		66.7	28.8	134			
Surr: 2-Fluorobiphenyl	60		100.0		60.1	35.9	125			
Surr: 4-Terphenyl-d14	57		100.0		57.0	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609C66**

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1609c66-001ams**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**SWMU 10-25-GW**	Batch ID:	**R37409**		RunNo:	**37484**				
Prep Date:		Analysis Date:	**9/26/2016**		SeqNo:	**1165543**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	2.5	25.00	8.650	64.1	53.8	128			
Surr: BFB	500		500.0		100	70	130			

Sample ID	**1609c66-001amsd**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**SWMU 10-25-GW**	Batch ID:	**R37409**		RunNo:	**37484**				
Prep Date:		Analysis Date:	**9/26/2016**		SeqNo:	**1165544**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	2.5	25.00	8.650	57.4	53.8	128	7.05	20	
Surr: BFB	500		500.0		99.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1609C66 RcptNo: 1

Received by/date: AT 09/21/16

Logged By: Anne Thorne 9/21/2016 4:15:00 PM Anne Thorne

Completed By: Anne Thorne 9/22/2016 Anne Thorne

Reviewed By: JO 09/22/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 3 1
(<2 or >12 unless noted)
Adjusted? NO
Checked by: JC

Special Handling (if applicable)

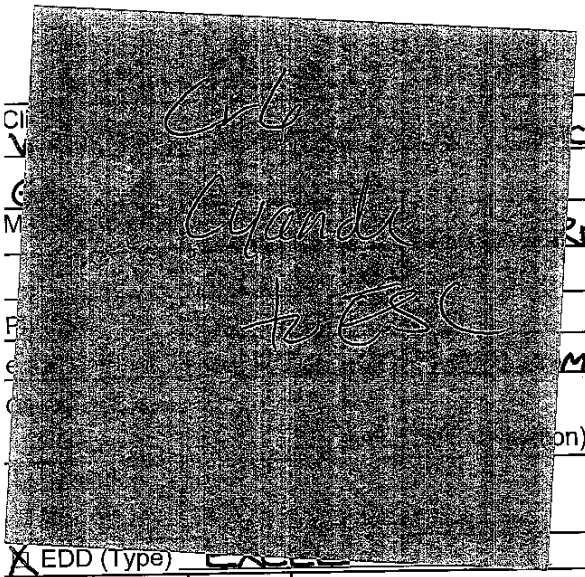
16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Turn-Around Time: ☐ Standard ☒ Rush

Project Name: SWMU 10

Project #:

Project Manager: ED RIEGE

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.3

☒ EDD (Type) EXCEL

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609C04	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR6	CYANIDE	Air Bubbles (Y or N)
9/21/16	0850	WATER	SWMU 10-25-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓						
				250 ML AMBER 1	NEAT	-001			✓														
				500 ML PLASTIC-1	HNO_3	-001												✓					
				125 ML PLASTIC-1	HNO_3	-001												✓					
				125 ML PLASTIC-1	H_2SO_4	-001													✓				
				500 ML PLASTIC-1	NEAT	-001													✓				
				50 ML PLASTIC-1	NH_4ZSO_4	-001														✓			
				500 ML PLASTIC-1	NAOH	-001															✓		
9/21/16	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002										✓							

Remarks:

Date	Time	Relinquished by	Received by	Date	Time
9/21/16	1010			9/21/16	1400
9/21/16	1615			09/24/16	1615

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

AND WATER QA/QC SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 05, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505001

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 05, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1-GW
Project: SWMU 10
Collection Date: 4/29/2015 5:10:00 PM
Lab ID: 1505001-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 6:25:02 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 6:25:02 PM	18985
Surr: DNOP	109	0	76.5-150		%REC	1	5/1/2015 6:25:02 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 5:29:47 PM	R25939
Surr: BFB	106	0	80-120		%REC	1	5/4/2015 5:29:47 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.58	2.0		mg/L	20	5/1/2015 12:05:38 PM	R25920
Chloride	3600	67	250		mg/L	500	5/6/2015 8:14:26 PM	R26026
Sulfate	340	2.3	10		mg/L	20	5/1/2015 12:05:38 PM	R25920
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.45	0.00095	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:49:37 PM	R26030
Cobalt	0.0084	0.0013	0.0060		mg/L	1	5/6/2015 6:49:37 PM	R26030
Iron	0.58	0.0073	0.020	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Manganese	0.93	0.00027	0.0020	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Nickel	0.21	0.0021	0.010	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:49:37 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:49:37 PM	R26030
Zinc	0.029	0.0028	0.010		mg/L	1	5/6/2015 6:49:37 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.74	0.00095	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Beryllium	0.0024	0.00031	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Cadmium	ND	0.00097	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Chromium	0.013	0.0022	0.0060		mg/L	1	5/5/2015 5:25:11 PM	19025
Cobalt	0.012	0.0013	0.0060		mg/L	1	5/5/2015 5:25:11 PM	19025
Iron	16	0.36	1.0	*	mg/L	50	5/6/2015 4:49:53 PM	19025
Manganese	1.2	0.0076	0.010	*	mg/L	5	5/6/2015 4:44:00 PM	19025
Nickel	0.19	0.0023	0.010	*	mg/L	1	5/5/2015 5:25:11 PM	19025
Silver	ND	0.0021	0.0050		mg/L	1	5/5/2015 5:25:11 PM	19025
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:25:11 PM	19025
Zinc	0.071	0.0036	0.010		mg/L	1	5/6/2015 4:42:01 PM	19025
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00029	0.0020		mg/L	2	5/11/2015 2:28:51 PM	R26119
Arsenic	ND	0.0013	0.020		mg/L	20	5/12/2015 4:56:55 PM	R26138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1-GW
Project: SWMU 10
Collection Date: 4/29/2015 5:10:00 PM
Lab ID: 1505001-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.000053	0.0020		mg/L	2	5/11/2015 2:28:51 PM	R26119
Selenium	0.030	0.0039	0.020		mg/L	20	5/12/2015 4:56:55 PM	R26138
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.0011	0.00022	0.0010		mg/L	1	5/8/2015 1:27:40 PM	19025
Arsenic	ND	0.0058	0.020		mg/L	20	5/15/2015 12:08:55 PM	19025
Lead	0.017	0.000069	0.0010	*	mg/L	1	5/8/2015 1:27:40 PM	19025
Selenium	ND	0.0097	0.050		mg/L	50	5/15/2015 12:28:41 PM	19025
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:20:16 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1-GW
Project: SWMU 10
Collection Date: 4/29/2015 5:10:00 PM
Lab ID: 1505001-001 **Matrix:** AQUEOUS **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:03:51 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1-GW
Project: SWMU 10
Collection Date: 4/29/2015 5:10:00 PM
Lab ID: 1505001-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Surr: 2-Fluorophenol	33.0	0	14.9-111		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: Phenol-d5	33.2	0	11.3-108		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 2,4,6-Tribromophenol	40.5	0	15.7-154		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: Nitrobenzene-d5	73.6	0	47.8-106		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 2-Fluorobiphenyl	68.1	0	21.3-123		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 4-Terphenyl-d14	69.5	0	14.3-135		%REC	1	5/5/2015 9:03:51 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	4.7	0.065	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Methyl tert-butyl ether (MTBE)	6.1	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1-GW
Project: SWMU 10
Collection Date: 4/29/2015 5:10:00 PM
Lab ID: 1505001-001 **Matrix:** AQUEOUS **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 12:44:51 PM	R26017
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-1-GW
Project: SWMU 10
Collection Date: 4/29/2015 5:10:00 PM
Lab ID: 1505001-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	94.8	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017
Surr: Toluene-d8	103	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505001-002
Matrix: TRIP BLANK
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.065	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Toluene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Naphthalene	ND	0.22	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Acetone	ND	0.94	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromobenzene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromoform	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromomethane	ND	1.2	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Butanone	ND	0.36	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Carbon disulfide	ND	0.67	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloroethane	ND	0.10	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloroform	ND	0.21	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloromethane	ND	0.17	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dibromomethane	ND	0.23	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505001-002
Matrix: TRIP BLANK
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Hexanone	ND	0.48	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Styrene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/7/2015 3:29:51 PM	R26051
Surr: 1,2-Dichloroethane-d4	125	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: Dibromofluoromethane	107	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: Toluene-d8	93.7	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

ESC
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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762967-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505001-001H SWMU 10-1-GW

Project # :

Collected By :
Collection Date : 04/29/15 17:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.046	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762967-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505001-001I SWMU 10-1-GW

Project # :

Collected By :
Collection Date : 04/29/15 17:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43
L762967-02 (CR6ICFFP) - pH=7.53

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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762967

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762967-01
WG788013: R3036316: L762967-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19025**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**19025**	RunNo:	**25975**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID	**LCS-19025**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19025**	RunNo:	**25975**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769761** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.48	0.020	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			

Sample ID	**MB-19025**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**19025**	RunNo:	**25986**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID	**LCS-19025**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19025**	RunNo:	**25986**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19025**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **19025**			RunNo: **25987**				
Prep Date:	**5/4/2015**	Analysis Date: **5/5/2015**			SeqNo: **770247**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID	**MB-19025**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **19025**			RunNo: **25987**				
Prep Date:	**5/4/2015**	Analysis Date: **5/5/2015**			SeqNo: **770248**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774818**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774819**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774821**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774822**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775338** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768274** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Sulfate	9.7	0.50	10.00	0	97.1	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Sample ID **1505001-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-1-GW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768876** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02780	87.1	51	131			
Surr: BFB	21		20.00		106	80	120			

Sample ID **1505001-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-1-GW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768877** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02780	85.5	51	131	1.74	20	
Surr: BFB	21		20.00		105	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **1505001-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10-1-GW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771288** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	4.693	104	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	98.6	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	121	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.9	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.1	70	130			
Surr: Toluene-d8	9.8		10.00		97.5	70	130			

Sample ID **1505001-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10-1-GW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771289** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	4.693	108	70	130	2.94	20	
Toluene	21	1.0	20.00	0	103	70	130	3.36	20	
Chlorobenzene	20	1.0	20.00	0	102	70	130	3.71	20	
1,1-Dichloroethene	25	1.0	20.00	0	127	70	130	4.50	20	
Trichloroethene (TCE)	20	1.0	20.00	0	99.5	70	130	0.436	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		101	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772391** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.5	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772398** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772398** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772398** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		119	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.2	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcsd-18996**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**18996**	RunNo:	**25988**					
Prep Date:	**5/1/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770338**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505001 RcptNo: 1

Received by/date: 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:02:51 AM

Reviewed By: CS 05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505001
29.15	1710	WATER	SWMU10-1-GW	40 ML VOA-6	HCL	-001
				1 LITER AMBER-2	NEAT	-001
				250 ML AMBER-1	NEAT	-001
				100 ML PLASTIC-1	HNO_3	-001
				500 ML PLASTIC-1	HNO_3	-001
				500 ML PLASTIC-1	NAOH	-001
				50 ML PLASTIC-1	$NH_4 2SO_4$	-001
29.15	—	WATER	TRIP BLANK	40 ML VOA-2	HCL	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) MRO	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	(SEE ATTACHED SHEET)	GEN CHEM	CR 6	Air Bubbles (Y or N)
		✓							✓						
										✓			✓		
			✓												
											✓				
											✓				
						✓									
														✓	
									✓						

Remarks:

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	0800			4-30-15	1300
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/30/15	1550			04/30/15	1550

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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Website: www.hallenvironmental.com

October 05, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505002

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 09, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB02
Project: SWMU 10
Collection Date: 4/29/2015 7:05:00 PM
Lab ID: 1505002-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 6:46:18 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 6:46:18 PM	18985
Surr: DNOP	106	0	76.5-150		%REC	1	5/1/2015 6:46:18 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 8:54:20 PM	R25939
Surr: BFB	86.0	0	80-120		%REC	1	5/4/2015 8:54:20 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/1/2015 12:18:03 PM	R25920
Chloride	0.20	0.13	0.50	J	mg/L	1	5/1/2015 12:18:03 PM	R25920
Sulfate	ND	0.11	0.50		mg/L	1	5/1/2015 12:18:03 PM	R25920
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:53:49 PM	R26030
Cobalt	ND	0.0013	0.0060		mg/L	1	5/6/2015 6:53:49 PM	R26030
Iron	0.030	0.0073	0.020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Manganese	0.00060	0.00027	0.0020	J	mg/L	1	5/6/2015 6:53:49 PM	R26030
Nickel	ND	0.0021	0.010		mg/L	1	5/6/2015 6:53:49 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:53:49 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:53:49 PM	R26030
Zinc	0.023	0.0028	0.010		mg/L	1	5/6/2015 6:53:49 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Beryllium	ND	0.00031	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Cadmium	ND	0.00097	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Chromium	ND	0.0022	0.0060		mg/L	1	5/4/2015 2:08:10 PM	R25943
Cobalt	ND	0.0013	0.0060		mg/L	1	5/4/2015 2:08:10 PM	R25943
Iron	ND	0.0073	0.020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Manganese	ND	0.0015	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Nickel	ND	0.0023	0.010		mg/L	1	5/4/2015 2:08:10 PM	R25943
Silver	ND	0.0021	0.0050		mg/L	1	5/4/2015 2:08:10 PM	R25943
Vanadium	ND	0.0015	0.050		mg/L	1	5/4/2015 2:08:10 PM	R25943
Zinc	ND	0.0036	0.010		mg/L	1	5/4/2015 2:08:10 PM	R25943
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00040	0.00014	0.0010	J	mg/L	1	5/12/2015 2:28:40 PM	R26138
Arsenic	ND	0.000065	0.0010		mg/L	1	5/12/2015 2:28:40 PM	R26138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB02
Project: SWMU 10
Collection Date: 4/29/2015 7:05:00 PM
Lab ID: 1505002-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	0.000073	0.000026	0.0010	J	mg/L	1	5/12/2015 2:28:40 PM	R26138
Selenium	ND	0.00019	0.0010		mg/L	1	5/12/2015 2:28:40 PM	R26138
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.00061	0.00022	0.0010	J	mg/L	1	5/12/2015 2:48:30 PM	R26138
Arsenic	ND	0.00044	0.0010		mg/L	1	5/12/2015 2:48:30 PM	R26138
Lead	ND	0.000069	0.00050		mg/L	1	5/12/2015 2:48:30 PM	R26138
Selenium	ND	0.00019	0.0010		mg/L	1	5/12/2015 2:48:30 PM	R26138
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:22:03 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB02
Project: SWMU 10
Collection Date: 4/29/2015 7:05:00 PM
Lab ID: 1505002-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:31:26 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB02
Project: SWMU 10
Collection Date: 4/29/2015 7:05:00 PM
Lab ID: 1505002-001 **Matrix:** AQUEOUS **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Surr: 2-Fluorophenol	94.3	0	14.9-111		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: Phenol-d5	86.2	0	11.3-108		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 2,4,6-Tribromophenol	105	0	15.7-154		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: Nitrobenzene-d5	108	0	47.8-106	S	%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 2-Fluorobiphenyl	105	0	21.3-123		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 4-Terphenyl-d14	93.3	0	14.3-135		%REC	1	5/5/2015 9:31:26 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Acetone	3.8	0.94	10	J	µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB02
Project: SWMU 10
Collection Date: 4/29/2015 7:05:00 PM
Lab ID: 1505002-001 **Matrix:** AQUEOUS **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 2:35:04 PM	R26017
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017
Surr: 4-Bromofluorobenzene	98.6	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB02
Project: SWMU 10
Collection Date: 4/29/2015 7:05:00 PM
Lab ID: 1505002-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017
Surr: Toluene-d8	98.7	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762969-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505002-001H SWMU 10 EB02

Project # :

Collected By :
Collection Date : 04/29/15 19:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 08:17 Printed: 05/12/15 08:18

ESC
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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762969

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762969-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.1	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.5	85	115			
Nickel	0.47	0.010	0.5000	0	93.8	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.7	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775338** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R25920**	RunNo:	**25920**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768219**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R25920**	RunNo:	**25920**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768220**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID	**1505002-001EMS**	SampType:	**MS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**SWMU 10 EB02**	Batch ID:	**R25920**	RunNo:	**25920**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768236**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.3	66.1	113			
Chloride	4.8	0.50	5.000	0.2004	92.7	81.8	112			
Sulfate	9.4	0.50	10.00	0	94.5	88.3	114			

Sample ID	**1505002-001EMSD**	SampType:	**MSD**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**SWMU 10 EB02**	Batch ID:	**R25920**	RunNo:	**25920**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768237**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	66.1	113	0.902	20	
Chloride	4.9	0.50	5.000	0.2004	93.5	81.8	112	0.817	20	
Sulfate	9.5	0.50	10.00	0	95.1	88.3	114	0.637	20	

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R25920**	RunNo:	**25920**					
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768273**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**
Client ID:	**LCSW**	Batch ID:	**R25920**	RunNo:	**25920**
Prep Date:		Analysis Date:	**5/1/2015**	SeqNo:	**768274**

Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.9	0.50	5.000	0	97.0	90	110			
Sulfate	9.7	0.50	10.00	0	97.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768862**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768863**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**lcsd-18996**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **18996**		RunNo: **25988**					
Prep Date:	**5/1/2015**	Analysis Date: **5/5/2015**		SeqNo: **770338**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505 345 3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505002 RcptNo: 1

Received by/date: [signature] 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM [signature]

Completed By: Lindsay Mangin 5/1/2015 6:28:50 AM [signature]

Reviewed By: CS 05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 1
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	(<2 or >12 unless noted) Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505002	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	(SEE ATTACHED SHEET)	GEN CHEM (SEE ATTACHED SHEET)	CR6	Air Bubbles (Y or N)
4.29.15	1905	WATER	SWMU 10 EB02	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓			✓		
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NaOH	-001							✓									
				500 ML PLASTIC-1	H_2SO_4	-001															~~CR6~~	

Date: 4.30.15 Time: 0800 Relinquished by:
Received by: Date Time 4-30-15 1300
Date: 4.30.15 Time: 1550 Relinquished by:
Received by: Date Time 04/30/15 1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505003

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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Albuquerque, NM 87109
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Case Narrative

WO#: **1505003**
Date: **11/5/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Hexavalent Chromium:
This report is an addendum to the original report, with an updated value for hexavalent chromium. The original result of 5.7 mg/kg, for sample SWMU 10-5 (0-2'), was in question because of previous suspected false positive results. An alternate laboratory was used for the analysis. Sample SWMU 10-5 (0-2') is less than 1.0mg/kg from the alternate laboratory.

ENERGY LABORATORIES
Trust our People. Trust our Data.
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Billings, MT 800.735.4489 • Casper, WY 888.235.0515
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ANALYTICAL SUMMARY REPORT

August 24, 2015

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B15080963

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 8/11/2015 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B15080963-001	1505003-001C, SWMU 10-5 (0-2 Feet)	04/29/15 12:00	08/11/15	Solid	Chromium, Hexavalent Water Extraction for Hex Chromium

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Corporate Quality Assurance Officer

Digitally signed by
Andy Valkenburg
Date: 2015.08.24 14:42:19 -06:00

CLIENT: Hall Environmental
Project: Not Indicated
Work Order: B15080963

Report Date: 08/24/15

CASE NARRATIVE

Level IV reporting was requested. Included with the analysis reports are instrument data reports for all analysis associated with the instrument calibration, QC sample analysis, and sample analysis. Copies of the detailed laboratory records for the analyses are sorted by method, instrument, and then analysis time. All analytical data is within method QA/QC specifications except as noted on analyses and/or QC summary reports, or in this narrative. The detailed report format with the instrument data identifies which QC batch ID and sequence QC are associated with each analysis result for a sample.

Inclusion of the raw data will be found with the attached data files. The results of this Analytical Report relate only to the items submitted for analysis. Only the raw data associated with parameters listed on this report should be validated.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505003-001C, SWMU 10-5 (0-2 Feet)
Project: Not Indicated
Matrix: Solid

Lab ID: B15080963-001
Collection Date: 04/29/15 12:00
DateReceived: 08/11/15
Report Date: 08/24/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	08/12/15 15:00 / ma	08/12/15 11:30	Water Extr	SPEC_150812C	6	92222

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: Hall Environmental
Work Order: B15080963
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 92222

Date: *24-Aug-15*

Run ID :Run Order: **SPEC_150812C: 5** SampType: **Method Blank** Lab ID: **MB-92222** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: **8/12/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	0.01									

Associated samples: **B15080963-001A**

Run ID :Run Order: **SPEC_150812C: 7** SampType: **Sample Matrix Spike** Lab ID: **B15080963-001AMS** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.751	1.0	1	0	75	70	130				

Associated samples: **B15080963-001A**

Run ID :Run Order: **SPEC_150812C: 8** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B15080963-001AMSD** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.713	1.0	1	0	71	70	130	0.7512		20	

Associated samples: **B15080963-001A**

Run ID :Run Order: **SPEC_150812C: 9** SampType: **Sample Duplicate** Lab ID: **B15080963-001ADUP** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: **8/12/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	1.0		0				0		30	

Associated samples: **B15080963-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

Hall Environmental

B15080963

Login completed by: Randa Nees
Reviewed by: BL2000\tedwards
Reviewed Date: 8/12/2015

Date Received: 8/11/2015
Received by: jrz
Carrier name: Return-UPS NDA

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	1.8°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

CHAIN OF CUSTODY RECORD

SUB CONTRATOR: Bil-Energy	COMPANY: Energy Laboratories	PHONE: (800) 735-4489	FAX: (406) 252-6069
ADDRESS: 1120 South 27th Street		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Billings, MT 59107			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1505003-001C	SWMU 10-5 (0-2')	8OZGU	Soil	4/29/2015 12:00:00 PM	1	Cr6- LEVEL 4. B15080963-001

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 8/10/2015	Time: 3:06 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: JRZoelmer	Date: 8/11/15	Time: 0915

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 1.8 °C Attempt to Cool? BLUE ICE

Comments: RTRN UPS NDA / SEALED COOLER

Energy Laboratories Inc

ANALYTICAL RUN Summary

24-Aug-15

Run ID SPEC_150812C

Run Start Date:	8/12/2015 3:00:00 P
Analyst:	Mark A Spitzer
Ical:	
Column ID:	
Comments:	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781583	CCB	CR-HEX-W	CCB		8/12/2015 3:00:0	1	R247670		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0002	0.0002		0	0	0	0.000557	0.01	0	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781584	CCV	CR-HEX-W	CCV		8/12/2015 3:00:0	1	R247670		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.1059	0.1059		0.1	0	0	0.000557	0.01	0	106%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781585	MB-R247670	CR-HEX-W	MBLK		8/12/2015 3:00:0	1	R247670		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0002	0		0	0	0	0.004	0.01	0	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781586	LCS-R247670	CR-HEX-W	LCS		8/12/2015 3:00:0	1	R247670		1E+07	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0988	0.0988		0.1	0	0	0.004	0.01	0	99%	85	115	0%	

Hexavalent Chromium (Cr6+) in Soil and Water SM3500-Cr B

Analyst: MAS Analysis Date: 11/5/14 Time: 3:30 PM

Calibration Standard: ME1406020 Reference Std: ME142258

Calibration Date Used: new calibration Color Reagent: ME1410208

pH (0.7-1.3)	SAMPLE ID	Pfactor	D.F.	Turb. Blk	Sample Abs.	Sample Conc mg/L	Corrected Conc.
✓	0				.005		
✓	0.01 * 1mL of ME1406020 diluted to 10mL				-.001		
✓	0.1 * 1mL of ME1406020 diluted to 10mL				0.082		
✓	0.25 * 2.5mL of ME1406020 diluted to 10mL				0.209		

Hexavalent Chromium (Cr6+) in Soil and Water SM3500-Cr B

Analyst: MAS Analysis Date: 8/12/15 Time: 3:00 PM
Instrument: Spec
Calibration Standard: ME150226B Reference Std: ME150226A
Calibration Date Used: 11-5-14 Color Reagent: ME150812C

pH (0.7-1.3)	SAMPLE ID	Pfactor	D.F.	Turb. Blk	Sample Abs.	Sample Conc mg/L	Corrected Conc.
✓	CBLK					AZ	
✓	CCB					.0002	
✓	CCV					.1059	
✓	MBLK					.0002	
✓	0.1 LFB					.0988	
✓	MB-92222					.0006	
✓	B15080963-001A			.0535		.0442	-.0093
✓	-MS			↓		.1290	.0755
✓	-MSD					.1252	.0717
✓	B15080963-001ADUP			.0171		.0170	-.0001
✓	CCB					.0016	
✓	CCV					.1078	

PREP BATCH REPORT

Prep Code: **CR-HEX-S-WATER-EX** Technician: **Mark A Spitzer** Prep Start Date: **8/12/2015 11:30:29 A**

Prep Batch **92222** Prep Temp **NA °C** Batch Units: **G** Prep End Date: **8/12/2015 2:49:00 PM**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
MB-92222			100	0	0	100	1		8/12/2015	8/12/2015
B15080963-001A	Solid		10	0	0	100	9.95024876		8/12/2015	8/12/2015
B15080963-001ADUP	Solid		10	0	0	100	9.98003992		8/12/2015	8/12/2015

Energy Laboratories Inc

Standard LOG

Standard ID: ME150226A
Standard Name HEX Cr 1.0 mg/L QCS
Date Prepared 2/26/2015
Date Expires: 2/26/2016
Department ME
Vendor:
Lot Number:
Balance ID:

Type: Secondary
BY: Mark A Spitzer

Status: New

Comments:

Final Volume: 250 mL

Stock Source		Base Units	Amount Added
ETC0311	Cr 6+ Stock Ref Solution	ug/mL	5 mL

Analytes		CAS	Conc:	ug/mL
A	Chromium, Hexavalent	18540-29-9		0

Energy Laboratories Inc

Standard LOG

Standard ID: ME150226B
Standard Name HEX Cr 1.0 mg/L STD
Date Prepared 2/26/2015
Date Expires: 2/26/2016
Department ME
Vendor:
Lot Number:
Balance ID:

Type: Secondary
BY: Mark A Spitzer

Status: Open

Comments:

Final Volume: 250 mL

Stock Source		Base Units	Amount Added
ETC0310	CR6+ STOCK	ug/mL	0.5 mL

Analytes		CAS	Conc:	ug/mL
A	Chromium, Hexavalent	18540-29-9		0

Energy Laboratories Inc

Standard LOG

Standard ID: ME150812C
Standard Name Hex chrome color reagent
Date Prepared 8/12/2015
Date Expires: 8/12/2016
Department ME
Vendor:
Lot Number:
Balance ID: 4-place Balance
Comments: Diluted to 40 mL in acetone

Type:
BY: Mark A Spitzer

Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units
1,5-Diphenylcarbohydrazide	1925	0.2	g

Final Volume: 40 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: ug/mL

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505003** RcptNo: 1

Received by/date: 04/30/15

Logged By: **Lindsay Mangin** 4/30/2015 3:50:00 PM

Completed By: **Lindsay Mangin** 5/1/2015 6:34:19 AM

Reviewed By: 05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (If applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504003	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1200	SOIL	SWMU 10-5 (0-2')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1212	SOIL	SWMU 10-5 (2-4')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1232	SOIL	SWMU 10-5 (4-6')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	1250	SOIL	SWMU 10-5 (14-16')	~~JARS-2~~ VIALS	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MeOH	-004										✓					
				VIALS-2	SOBI	-004										✓					

Date: 4.30.15 Time: 0800 Relinquished by:
Received by: Date Time
Date: 4/30/15 Time: 1600 Relinquished by:
Received by: Date Time 04/30/15 1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☐ Yes ☐ No
Sample Temperature: 6 HEAD SPACE

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAD SPACE	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) GRO/DRO & MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1310	SOIL	SWMU 10-5 (22-24')	JARS-2	NEAT	-005			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓					
				VIALS-2	SOIL	-005										✓					

Remarks:

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	0800			4/29/15	1300
4-30-15	1550			04/30/15	1550

"Hall Environmental may not accept verbal changes. Please email, fax or mail written changes to the above address. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 08, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505003

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 09, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505003**
Date: **10/8/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 12:00:00 PM
Lab ID: 1505003-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	7700	540	980		mg/Kg-dr	100	5/5/2015 2:49:11 PM	19040
Motor Oil Range Organics (MRO)	5900	4900	4900		mg/Kg-dr	100	5/5/2015 2:49:11 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	100	5/5/2015 2:49:11 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.53	0.0071	0.080		mg/Kg-dr	2	5/6/2015 4:02:26 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Arsenic	2.6	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Barium	500	0.069	0.23		mg/Kg-dr	2	5/7/2015 1:22:33 PM	19080
Beryllium	0.99	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Chromium	54	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Cobalt	6.7	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Iron	18000	70	290		mg/Kg-dr	100	5/7/2015 11:03:43 AM	19080
Lead	4.9	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Manganese	870	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:30:37 PM	19080
Nickel	14	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Vanadium	26	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Zinc	150	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Aniline	ND	1.0	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Azobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benz(a)anthracene	ND	0.95	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(a)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(b)fluoranthene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzoic acid	ND	0.69	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-chloroethoxy)methane	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 12:00:00 PM
Lab ID: 1505003-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.92	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-ethylhexyl)phthalate	ND	1.4	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chloro-3-methylphenol	ND	1.2	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chloroaniline	ND	1.1	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Di-n-butyl phthalate	ND	1.4	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Di-n-octyl phthalate	ND	1.3	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,2-Dichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
3,3´-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dichlorophenol	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dimethylphenol	ND	0.95	3.6		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.65	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dinitrophenol	ND	0.50	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dinitrotoluene	ND	1.1	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,6-Dinitrotoluene	ND	1.3	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Fluorene	ND	1.6	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorocyclopentadiene	ND	0.83	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Isophorone	ND	1.3	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1-Methylnaphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Methylnaphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Methylphenol	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 12:00:00 PM
Lab ID: 1505003-001
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
N-Nitrosodi-n-propylamine	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Naphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Nitroaniline	ND	1.1	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Nitrobenzene	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pentachlorophenol	ND	0.75	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Phenanthrene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pyridine	ND	1.0	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/8/2015 6:26:16 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.014	0.0046	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Toluene	0.010	0.0037	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Ethylbenzene	0.016	0.0028	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,4-Trimethylbenzene	0.063	0.0016	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3,5-Trimethylbenzene	0.041	0.0020	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichloroethane (EDC)	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Naphthalene	0.12	0.0074	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1-Methylnaphthalene	0.51	0.019	0.12		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Methylnaphthalene	0.53	0.020	0.12		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Acetone	ND	0.023	0.47		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromobenzene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromodichloromethane	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 12:00:00 PM
Lab ID: 1505003-001
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromomethane	ND	0.0060	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Butanone	ND	0.020	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Carbon disulfide	ND	0.022	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Carbon tetrachloride	ND	0.0030	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chlorobenzene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloroethane	ND	0.024	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloroform	ND	0.0032	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloromethane	ND	0.0036	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Chlorotoluene	ND	0.0035	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Chlorotoluene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
cis-1,2-DCE	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
cis-1,3-Dichloropropene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0053	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dibromochloromethane	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dibromomethane	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichlorobenzene	ND	0.0019	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3-Dichlorobenzene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,4-Dichlorobenzene	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dichlorodifluoromethane	ND	0.0078	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloroethane	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloroethene	ND	0.0021	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichloropropane	ND	0.0017	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3-Dichloropropane	ND	0.0043	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2,2-Dichloropropane	ND	0.0045	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloropropene	ND	0.0046	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Hexachlorobutadiene	ND	0.0043	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Hexanone	ND	0.0076	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Isopropylbenzene	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Isopropyltoluene	0.0061	0.0022	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Methyl-2-pentanone	ND	0.0054	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Methylene chloride	ND	0.012	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
n-Butylbenzene	0.0094	0.0027	0.093	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
n-Propylbenzene	0.0051	0.0023	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
sec-Butylbenzene	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Styrene	ND	0.0057	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
tert-Butylbenzene	ND	0.0036	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 12:00:00 PM
Lab ID: 1505003-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0027	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
trans-1,2-DCE	ND	0.0020	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
trans-1,3-Dichloropropene	ND	0.0056	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,3-Trichlorobenzene	ND	0.0066	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,4-Trichlorobenzene	ND	0.0057	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,1-Trichloroethane	ND	0.0047	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,2-Trichloroethane	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Trichloroethene (TCE)	ND	0.0030	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Trichlorofluoromethane	ND	0.0094	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,3-Trichloropropane	ND	0.0052	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Vinyl chloride	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Xylenes, Total	0.14	0.0086	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Surr: Dibromofluoromethane	99.5		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: 1,2-Dichloroethane-d4	93.8		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: Toluene-d8	95.1		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: 4-Bromofluorobenzene	81.4		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	2.5	0.78	3.1	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	R25941
Surr: BFB	112	0	67.4-150		%REC	1	5/5/2015 12:59:46 AM	R25941

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (2-4'
Project: SWMU 10
Collection Date: 4/29/2015 12:12:00 PM
Lab ID: 1505003-002 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	780	5.3	9.6		mg/Kg-dr	1	5/5/2015 3:16:02 PM	19040
Motor Oil Range Organics (MRO)	300	48	48		mg/Kg-dr	1	5/5/2015 3:16:02 PM	19040
Surr: DNOP	110	0	57.9-140		%REC	1	5/5/2015 3:16:02 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	31	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0087	0.0044	0.050	J	mg/Kg-dr	1	5/6/2015 3:33:31 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Arsenic	1.9	0.41	3.5	J	mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Barium	190	0.042	0.14		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Beryllium	1.4	0.010	0.21		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Cadmium	ND	0.039	0.14		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Chromium	5.0	0.085	0.42		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Cobalt	2.9	0.053	0.42		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Iron	12000	85	350		mg/Kg-dr	100	5/7/2015 11:05:07 AM	19080
Lead	9.2	0.15	0.35		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Manganese	410	0.17	0.28		mg/Kg-dr	2	5/7/2015 1:25:33 PM	19080
Nickel	4.4	0.18	0.70		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Selenium	ND	2.2	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Silver	ND	0.042	0.35		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Vanadium	11	0.047	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Zinc	22	0.91	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Acenaphthylene	ND	0.75	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Aniline	ND	0.65	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Anthracene	ND	0.63	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Azobenzene	ND	0.83	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benz(a)anthracene	ND	0.58	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(a)pyrene	ND	0.83	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(b)fluoranthene	ND	0.70	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(g,h,i)perylene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(k)fluoranthene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzoic acid	ND	0.42	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzyl alcohol	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-chloroethoxy)methane	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (2-4'
Project: SWMU 10
Collection Date: 4/29/2015 12:12:00 PM
Lab ID: 1505003-002 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.73	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.57	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.83	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Bromophenyl phenyl ether	ND	0.79	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Butyl benzyl phthalate	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Carbazole	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chloro-3-methylphenol	ND	0.74	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chloroaniline	ND	0.69	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Chloronaphthalene	ND	0.79	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Chlorophenol	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chlorophenyl phenyl ether	ND	1.1	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Chrysene	ND	0.74	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Di-n-butyl phthalate	ND	0.84	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Di-n-octyl phthalate	ND	0.83	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dibenz(a,h)anthracene	ND	0.80	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dibenzofuran	ND	0.79	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,2-Dichlorobenzene	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,3-Dichlorobenzene	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,4-Dichlorobenzene	ND	0.78	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
3,3´-Dichlorobenzidine	ND	0.57	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Diethyl phthalate	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dimethyl phthalate	ND	0.68	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dichlorophenol	ND	0.74	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dimethylphenol	ND	0.58	2.2		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.40	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dinitrophenol	ND	0.31	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dinitrotoluene	ND	0.66	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,6-Dinitrotoluene	ND	0.82	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Fluoranthene	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Fluorene	ND	1.0	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorobenzene	ND	0.70	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorobutadiene	ND	0.73	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorocyclopentadiene	ND	0.51	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachloroethane	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Isophorone	ND	0.79	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1-Methylnaphthalene	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Methylnaphthalene	ND	0.68	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Methylphenol	ND	0.74	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (2-4'
Project: SWMU 10
Collection Date: 4/29/2015 12:12:00 PM
Lab ID: 1505003-002
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.77	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
N-Nitrosodi-n-propylamine	ND	0.77	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
N-Nitrosodiphenylamine	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Naphthalene	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Nitroaniline	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
3-Nitroaniline	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Nitroaniline	ND	0.67	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Nitrobenzene	ND	0.76	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Nitrophenol	ND	0.67	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Nitrophenol	ND	0.64	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pentachlorophenol	ND	0.46	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Phenanthrene	1.1	0.78	1.5	J	mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Phenol	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pyrene	ND	0.96	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pyridine	ND	0.62	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,2,4-Trichlorobenzene	ND	0.76	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4,5-Trichlorophenol	ND	0.86	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4,6-Trichlorophenol	ND	0.86	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Surr: 2-Fluorophenol	92.9		26.4-129		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: Phenol-d5	92.6		34.8-118		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 2,4,6-Tribromophenol	90.9		26.8-128		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: Nitrobenzene-d5	83.7		35.8-124		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 2-Fluorobiphenyl	80.1		24.5-139		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 4-Terphenyl-d14	103		29.4-129		%REC	1	5/8/2015 6:54:09 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.040	0.0060	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Toluene	0.024	0.0048	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Ethylbenzene	0.030	0.0037	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0057	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,4-Trimethylbenzene	0.11	0.0020	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3,5-Trimethylbenzene	0.054	0.0026	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichloroethane (EDC)	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0032	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Naphthalene	0.16	0.0096	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1-Methylnaphthalene	0.63	0.024	0.16		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Methylnaphthalene	0.74	0.026	0.16		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Acetone	ND	0.030	0.60		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromobenzene	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromodichloromethane	ND	0.0033	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (2-4'
Project: SWMU 10
Collection Date: 4/29/2015 12:12:00 PM
Lab ID: 1505003-002
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0032	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromomethane	ND	0.0078	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Butanone	ND	0.026	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Carbon disulfide	ND	0.029	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Carbon tetrachloride	ND	0.0039	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chlorobenzene	ND	0.0031	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloroethane	ND	0.031	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloroform	ND	0.0042	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloromethane	ND	0.0047	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Chlorotoluene	ND	0.0045	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Chlorotoluene	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
cis-1,2-DCE	ND	0.0051	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
cis-1,3-Dichloropropene	ND	0.0028	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0069	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dibromochloromethane	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dibromomethane	ND	0.0042	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichlorobenzene	ND	0.0024	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3-Dichlorobenzene	ND	0.0047	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,4-Dichlorobenzene	ND	0.0050	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dichlorodifluoromethane	ND	0.010	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloroethane	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloroethene	ND	0.0028	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichloropropane	ND	0.0022	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3-Dichloropropane	ND	0.0055	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2,2-Dichloropropane	ND	0.0059	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloropropene	ND	0.0060	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Hexachlorobutadiene	ND	0.0056	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Hexanone	ND	0.0099	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Isopropylbenzene	0.0046	0.0034	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Isopropyltoluene	0.0092	0.0029	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Methyl-2-pentanone	ND	0.0070	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Methylene chloride	ND	0.016	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
n-Butylbenzene	0.016	0.0035	0.12	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
n-Propylbenzene	0.010	0.0030	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
sec-Butylbenzene	ND	0.0057	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Styrene	ND	0.0074	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
tert-Butylbenzene	ND	0.0046	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0033	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0049	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (2-4'
Project: SWMU 10
Collection Date: 4/29/2015 12:12:00 PM
Lab ID: 1505003-002
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0035	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
trans-1,2-DCE	ND	0.0026	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
trans-1,3-Dichloropropene	ND	0.0072	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,3-Trichlorobenzene	ND	0.0086	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,4-Trichlorobenzene	ND	0.0074	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,1-Trichloroethane	ND	0.0061	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,2-Trichloroethane	ND	0.0048	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Trichloroethene (TCE)	ND	0.0039	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Trichlorofluoromethane	ND	0.012	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,3-Trichloropropane	ND	0.0067	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Vinyl chloride	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Xylenes, Total	0.15	0.011	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: 1,2-Dichloroethane-d4	94.3		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: Toluene-d8	93.9		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: 4-Bromofluorobenzene	75.7		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	4.7	1.0	4.0		mg/Kg-dr	1	5/5/2015 2:26:08 AM	R25941
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 2:26:08 AM	R25941

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (4-6')
Project: SWMU 10
Collection Date: 4/29/2015 12:32:00 PM
Lab ID: 1505003-003 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3000	54	97		mg/Kg-dr	10	5/7/2015 3:18:58 PM	19040
Motor Oil Range Organics (MRO)	ND	480	480		mg/Kg-dr	10	5/7/2015 3:18:58 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/7/2015 3:18:58 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	50	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0085	0.0063	0.071	J	mg/Kg-dr	1	5/6/2015 3:35:24 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.6	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Arsenic	1.5	0.57	4.9	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Barium	110	0.058	0.20		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Beryllium	1.8	0.014	0.29		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Cadmium	0.062	0.054	0.20	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Chromium	ND	0.12	0.59		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Cobalt	1.0	0.074	0.59		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Iron	7200	120	490		mg/Kg-dr	100	5/7/2015 11:06:30 AM	19080
Lead	17	0.21	0.49		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Manganese	200	0.11	0.20		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Nickel	0.69	0.25	0.98	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Selenium	ND	3.0	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Silver	ND	0.058	0.49		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Vanadium	2.3	0.065	4.9	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Zinc	24	1.3	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Acenaphthylene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Aniline	ND	0.17	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Anthracene	ND	0.17	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Azobenzene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benz(a)anthracene	ND	0.16	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(a)pyrene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(b)fluoranthene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(g,h,i)perylene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(k)fluoranthene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzoic acid	ND	0.11	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzyl alcohol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-chloroethoxy)methane	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (4-6')
Project: SWMU 10
Collection Date: 4/29/2015 12:32:00 PM
Lab ID: 1505003-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.15	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.22	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Bromophenyl phenyl ether	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Butyl benzyl phthalate	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Carbazole	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chloro-3-methylphenol	ND	0.20	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chloroaniline	ND	0.18	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Chloronaphthalene	ND	0.21	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Chlorophenol	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chlorophenyl phenyl ether	ND	0.30	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Chrysene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Di-n-butyl phthalate	ND	0.23	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Di-n-octyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dibenz(a,h)anthracene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dibenzofuran	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,2-Dichlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,3-Dichlorobenzene	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,4-Dichlorobenzene	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
3,3´-Dichlorobenzidine	ND	0.15	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Diethyl phthalate	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dimethyl phthalate	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dichlorophenol	ND	0.20	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dimethylphenol	ND	0.16	0.60		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.11	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dinitrophenol	ND	0.083	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dinitrotoluene	ND	0.18	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,6-Dinitrotoluene	ND	0.22	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Fluoranthene	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Fluorene	1.4	0.27	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorobutadiene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorocyclopentadiene	ND	0.14	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachloroethane	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Isophorone	ND	0.21	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1-Methylnaphthalene	16	0.93	2.0		mg/Kg-dr	5	5/11/2015 12:27:02 PM	19026
2-Methylnaphthalene	26	0.91	2.0		mg/Kg-dr	5	5/11/2015 12:27:02 PM	19026
2-Methylphenol	ND	0.20	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (4-6')
Project: SWMU 10
Collection Date: 4/29/2015 12:32:00 PM
Lab ID: 1505003-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
N-Nitrosodi-n-propylamine	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
N-Nitrosodiphenylamine	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Naphthalene	5.8	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Nitroaniline	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
3-Nitroaniline	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Nitroaniline	ND	0.18	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Nitrobenzene	ND	0.21	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Nitrophenol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Nitrophenol	ND	0.17	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pentachlorophenol	ND	0.12	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Phenanthrene	3.0	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Phenol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pyrene	ND	0.26	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pyridine	ND	0.17	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,2,4-Trichlorobenzene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4,5-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4,6-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Surr: 2-Fluorophenol	69.4		26.4-129		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: Phenol-d5	71.1		34.8-118		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 2,4,6-Tribromophenol	46.1		26.8-128		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: Nitrobenzene-d5	40.1		35.8-124		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 2-Fluorobiphenyl	55.7		24.5-139		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 4-Terphenyl-d14	88.8		29.4-129		%REC	1	5/8/2015 7:22:09 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	8.0	0.12	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Toluene	7.1	0.094	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Ethylbenzene	14	0.073	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,4-Trimethylbenzene	25	0.040	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3,5-Trimethylbenzene	8.4	0.052	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichloroethane (EDC)	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dibromoethane (EDB)	ND	0.063	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Naphthalene	26	0.19	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1-Methylnaphthalene	46	0.48	3.2		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Methylnaphthalene	80	2.6	16		mg/Kg-dr	50	5/5/2015 12:28:54 PM	R25982
Acetone	ND	0.59	12		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromobenzene	ND	0.059	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromodichloromethane	ND	0.065	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (4-6')
Project: SWMU 10
Collection Date: 4/29/2015 12:32:00 PM
Lab ID: 1505003-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.064	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromomethane	ND	0.15	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Butanone	ND	0.51	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Carbon disulfide	ND	0.57	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Carbon tetrachloride	ND	0.077	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chlorobenzene	ND	0.061	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloroethane	ND	0.61	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloroform	ND	0.083	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloromethane	ND	0.092	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Chlorotoluene	ND	0.090	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Chlorotoluene	ND	0.060	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
cis-1,2-DCE	ND	0.10	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
cis-1,3-Dichloropropene	ND	0.055	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.14	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dibromochloromethane	ND	0.060	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dibromomethane	ND	0.084	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichlorobenzene	ND	0.048	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3-Dichlorobenzene	ND	0.093	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,4-Dichlorobenzene	ND	0.099	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dichlorodifluoromethane	ND	0.20	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloroethane	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloroethene	ND	0.055	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichloropropane	ND	0.044	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3-Dichloropropane	ND	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2,2-Dichloropropane	ND	0.12	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloropropene	ND	0.12	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Hexachlorobutadiene	ND	0.11	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Hexanone	ND	0.20	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Isopropylbenzene	2.6	0.067	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Isopropyltoluene	1.2	0.056	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Methyl-2-pentanone	ND	0.14	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Methylene chloride	ND	0.32	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
n-Butylbenzene	1.9	0.068	2.4	J	mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
n-Propylbenzene	3.8	0.059	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
sec-Butylbenzene	1.2	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Styrene	ND	0.15	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
tert-Butylbenzene	ND	0.091	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.065	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.096	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (4-6')
Project: SWMU 10
Collection Date: 4/29/2015 12:32:00 PM
Lab ID: 1505003-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.069	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
trans-1,2-DCE	ND	0.052	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
trans-1,3-Dichloropropene	ND	0.14	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,3-Trichlorobenzene	ND	0.17	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,4-Trichlorobenzene	ND	0.15	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,1-Trichloroethane	ND	0.12	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,2-Trichloroethane	ND	0.095	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Trichloroethene (TCE)	ND	0.077	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Trichlorofluoromethane	ND	0.24	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,3-Trichloropropane	ND	0.13	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Vinyl chloride	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Xylenes, Total	54	0.22	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Surr: Dibromofluoromethane	101		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: 1,2-Dichloroethane-d4	98.6		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: Toluene-d8	98.9		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: 4-Bromofluorobenzene	74.6		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	740	20	79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	R25941
Surr: BFB	99.6	0	67.4-150		%REC	10	5/5/2015 2:55:01 AM	R25941

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (14-16'
Project: SWMU 10
Collection Date: 4/29/2015 12:50:00 PM
Lab ID: 1505003-004 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/5/2015 4:36:28 PM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/5/2015 4:36:28 PM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/5/2015 4:36:28 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	49	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.011	0.0060	0.068	J	mg/Kg-dr	1	5/6/2015 3:37:14 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.5	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Arsenic	1.5	0.56	4.7	J	mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Barium	120	0.056	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Beryllium	1.8	0.014	0.28		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Cadmium	ND	0.053	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Chromium	2.5	0.11	0.57		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Cobalt	2.3	0.071	0.57		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Iron	10000	110	470		mg/Kg-dr	100	5/7/2015 11:08:10 AM	19080
Lead	16	0.21	0.47		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Manganese	280	0.11	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Nickel	3.1	0.24	0.94		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Selenium	ND	2.9	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Silver	ND	0.056	0.47		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Vanadium	7.2	0.063	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Zinc	27	1.2	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Acenaphthylene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Aniline	ND	0.17	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Anthracene	ND	0.17	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Azobenzene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benz(a)anthracene	ND	0.16	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(a)pyrene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(b)fluoranthene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(g,h,i)perylene	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(k)fluoranthene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzoic acid	ND	0.11	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzyl alcohol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-chloroethoxy)methane	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (14-16'
Project: SWMU 10
Collection Date: 4/29/2015 12:50:00 PM
Lab ID: 1505003-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.15	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.22	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Bromophenyl phenyl ether	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Butyl benzyl phthalate	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Carbazole	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chloro-3-methylphenol	ND	0.20	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chloroaniline	ND	0.18	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Chloronaphthalene	ND	0.21	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Chlorophenol	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chlorophenyl phenyl ether	ND	0.30	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Chrysene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Di-n-butyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Di-n-octyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dibenz(a,h)anthracene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dibenzofuran	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,2-Dichlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,3-Dichlorobenzene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,4-Dichlorobenzene	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
3,3´-Dichlorobenzidine	ND	0.15	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Diethyl phthalate	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dimethyl phthalate	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dichlorophenol	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dimethylphenol	ND	0.16	0.60		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.11	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dinitrophenol	ND	0.082	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dinitrotoluene	ND	0.18	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,6-Dinitrotoluene	ND	0.22	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Fluoranthene	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Fluorene	ND	0.27	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorobutadiene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorocyclopentadiene	ND	0.14	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachloroethane	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Isophorone	ND	0.21	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1-Methylnaphthalene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Methylnaphthalene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Methylphenol	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (14-16'
Project: SWMU 10
Collection Date: 4/29/2015 12:50:00 PM
Lab ID: 1505003-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
N-Nitrosodi-n-propylamine	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
N-Nitrosodiphenylamine	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Naphthalene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Nitroaniline	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
3-Nitroaniline	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Nitroaniline	ND	0.18	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Nitrobenzene	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Nitrophenol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Nitrophenol	ND	0.17	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pentachlorophenol	ND	0.12	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Phenanthrene	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Phenol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pyrene	ND	0.26	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pyridine	ND	0.17	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,2,4-Trichlorobenzene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4,5-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4,6-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Surr: 2-Fluorophenol	63.1		26.4-129		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: Phenol-d5	64.2		34.8-118		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 2,4,6-Tribromophenol	63.8		26.8-128		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: Nitrobenzene-d5	54.7		35.8-124		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 2-Fluorobiphenyl	41.2		24.5-139		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 4-Terphenyl-d14	73.1		29.4-129		%REC	1	5/7/2015 7:45:24 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.049	0.010	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Toluene	0.013	0.0084	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Ethylbenzene	0.026	0.0065	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.010	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,4-Trimethylbenzene	0.17	0.0035	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3,5-Trimethylbenzene	0.056	0.0046	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0056	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Naphthalene	0.11	0.017	0.14	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1-Methylnaphthalene	0.38	0.042	0.28		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Methylnaphthalene	0.69	0.046	0.28		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Acetone	ND	0.053	1.1		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromobenzene	ND	0.0052	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromodichloromethane	ND	0.0058	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (14-16'
Project: SWMU 10
Collection Date: 4/29/2015 12:50:00 PM
Lab ID: 1505003-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0057	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromomethane	ND	0.014	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Butanone	ND	0.045	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Carbon disulfide	ND	0.051	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Carbon tetrachloride	ND	0.0069	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chlorobenzene	ND	0.0054	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloroethane	ND	0.055	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloroform	ND	0.0074	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloromethane	ND	0.0082	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Chlorotoluene	ND	0.0080	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Chlorotoluene	ND	0.0053	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
cis-1,2-DCE	ND	0.0089	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
cis-1,3-Dichloropropene	ND	0.0049	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.012	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dibromochloromethane	ND	0.0053	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dibromomethane	ND	0.0074	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichlorobenzene	ND	0.0043	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3-Dichlorobenzene	ND	0.0083	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,4-Dichlorobenzene	ND	0.0088	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dichlorodifluoromethane	ND	0.018	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloroethane	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloroethene	ND	0.0049	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichloropropane	ND	0.0039	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3-Dichloropropane	ND	0.0097	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2,2-Dichloropropane	ND	0.010	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloropropene	ND	0.011	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Hexachlorobutadiene	ND	0.0098	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Hexanone	ND	0.017	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Isopropylbenzene	0.013	0.0060	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Isopropyltoluene	0.020	0.0050	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Methyl-2-pentanone	ND	0.012	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Methylene chloride	ND	0.028	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
n-Butylbenzene	0.038	0.0061	0.21	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
n-Propylbenzene	0.026	0.0053	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
sec-Butylbenzene	ND	0.010	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Styrene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
tert-Butylbenzene	ND	0.0081	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0058	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0086	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (14-16'
Project: SWMU 10
Collection Date: 4/29/2015 12:50:00 PM
Lab ID: 1505003-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0061	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
trans-1,2-DCE	ND	0.0046	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
trans-1,3-Dichloropropene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,3-Trichlorobenzene	ND	0.015	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,4-Trichlorobenzene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,1-Trichloroethane	ND	0.011	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,2-Trichloroethane	ND	0.0085	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Trichloroethene (TCE)	ND	0.0069	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Trichlorofluoromethane	ND	0.021	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,3-Trichloropropane	ND	0.012	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Vinyl chloride	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Xylenes, Total	0.11	0.020	0.14	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Surr: Dibromofluoromethane	100		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: 1,2-Dichloroethane-d4	89.7		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: Toluene-d8	94.0		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: 4-Bromofluorobenzene	92.4		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	13	1.8	7.1		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Surr: BFB	111	0	67.4-150		%REC	1	5/5/2015 12:57:41 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (22-24')
Project: SWMU 10
Collection Date: 4/29/2015 1:10:00 PM
Lab ID: 1505003-005 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/5/2015 5:03:15 PM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/5/2015 5:03:15 PM	19040
Surr: DNOP	110	0	57.9-140		%REC	1	5/5/2015 5:03:15 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0039	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:39:05 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Arsenic	1.6	0.33	2.8	J	mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Barium	200	0.034	0.11		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Beryllium	0.99	0.0084	0.17		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Chromium	15	0.068	0.34		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Cobalt	7.4	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Iron	18000	68	280		mg/Kg-dr	100	5/7/2015 11:09:34 AM	19080
Lead	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Manganese	820	0.33	0.57		mg/Kg-dr	5	5/8/2015 2:32:19 PM	19080
Nickel	15	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Vanadium	18	0.038	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Zinc	23	0.73	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Acenaphthylene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Aniline	ND	0.098	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Anthracene	ND	0.096	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benz(a)anthracene	ND	0.088	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (22-24')
Project: SWMU 10
Collection Date: 4/29/2015 1:10:00 PM
Lab ID: 1505003-005 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.086	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Carbazole	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Chlorophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Di-n-octyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
3,3´-Dichlorobenzidine	ND	0.087	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorocyclopentadiene	ND	0.078	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (22-24')
Project: SWMU 10
Collection Date: 4/29/2015 1:10:00 PM
Lab ID: 1505003-005 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Nitrophenol	ND	0.097	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Surr: 2-Fluorophenol	64.5		26.4-129		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: Phenol-d5	62.2		34.8-118		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 2,4,6-Tribromophenol	75.4		26.8-128		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: Nitrobenzene-d5	56.1		35.8-124		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 2-Fluorobiphenyl	60.1		24.5-139		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 4-Terphenyl-d14	95.5		29.4-129		%REC	1	5/7/2015 8:13:38 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0179	0.000432	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Toluene	0.0112	0.000199	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Ethylbenzene	0.00258	0.000322	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Xylenes, Total	0.00849	0.00114	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000803	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,4-Trimethylbenzene	0.00263	0.000501	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3,5-Trimethylbenzene	0.00179	0.000336	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000513	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000229	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Naphthalene	0.000785	0.000626	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1-Methylnaphthalene	0.000843	0.000752	0.00383	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Methylnaphthalene	0.000852	0.000749	0.00383	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Acetone	0.00186	0.00120	0.00958	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromobenzene	ND	0.000533	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (22-24')
Project: SWMU 10
Collection Date: 4/29/2015 1:10:00 PM
Lab ID: 1505003-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000259	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromoform	ND	0.000496	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Butanone	ND	0.000613	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Carbon tetrachloride	ND	0.000347	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chlorobenzene	ND	0.000194	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloroform	ND	0.000395	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloromethane	ND	0.000226	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Chlorotoluene	ND	0.000374	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Carbon disulfide	ND	0.000867	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Chlorotoluene	ND	0.000369	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
cis-1,2-DCE	ND	0.000507	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
cis-1,3-Dichloropropene	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000563	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dibromochloromethane	ND	0.000215	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dibromomethane	ND	0.00109	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichlorobenzene	ND	0.000425	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3-Dichlorobenzene	ND	0.000325	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,4-Dichlorobenzene	ND	0.000301	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dichlorodifluoromethane	ND	0.000782	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloroethane	ND	0.000447	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloroethene	ND	0.000320	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichloropropane	ND	0.000409	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3-Dichloropropane	ND	0.000298	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2,2-Dichloropropane	ND	0.000333	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloropropene	ND	0.000351	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Hexachlorobutadiene	ND	0.000387	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Isopropylbenzene	ND	0.000444	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Isopropyltoluene	ND	0.000743	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Methylene chloride	0.000565	0.000473	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
n-Butylbenzene	ND	0.000786	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Hexanone	ND	0.000398	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
n-Propylbenzene	0.000469	0.000359	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
sec-Butylbenzene	0.000766	0.000484	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Styrene	ND	0.000317	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Methyl-2-pentanone	ND	0.000809	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
tert-Butylbenzene	ND	0.000294	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000312	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5 (22-24')
Project: SWMU 10
Collection Date: 4/29/2015 1:10:00 PM
Lab ID: 1505003-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000421	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Tetrachloroethene (PCE)	ND	0.000380	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
trans-1,2-DCE	ND	0.000310	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
trans-1,3-Dichloropropene	ND	0.000250	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,3-Trichlorobenzene	ND	0.000701	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,4-Trichlorobenzene	ND	0.000718	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,1-Trichloroethane	ND	0.000272	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,2-Trichloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Trichloroethene (TCE)	ND	0.000381	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Trichlorofluoromethane	ND	0.000387	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,3-Trichloropropane	ND	0.000673	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Vinyl chloride	ND	0.000219	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: Toluene-d8	81.3	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.87	3.5		mg/Kg-dr	1	5/5/2015 8:10:29 PM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 8:10:29 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-001C SWMU 10-5 0-2 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	5.7	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-01 (PH) - 8.1 at 21.0c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-002C SWMU 10-5 2-4 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	130		mV	2580 B-2011	05/10/15	1
pH	8.5	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-02 (PH) - 8.5 at 20.7c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-003C SWMU 10-5 4-6 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:32

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-03 (PH) - 8.3 at 20.9c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-04

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-004C SWMU 10-5 14-16 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-04 (PH) - 8.3 at 21.0c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-05

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-005C SWMU 10-5 22-24 FT

Project # :

Collected By :
Collection Date : 04/29/15 13:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	9.2	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-05 (PH) - 9.2 at 20.7c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762976

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23
Cyanide	< .25	mg/kg			WG787856	05/12/15 12:46

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium,Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733
Cyanide	mg/kg	101	108.	107.	50-150	WG787856

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium,Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L762976

May 13, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787168: R3035796: L762976-01 02 03 04 05
WG787134: R3035910: L762976-01 02 03 04 05
WG787860: R3036066: L762976-01 02 03 04 05
WG787733: R3036388: L762976-01 02 03 05
WG787856: R3036409: L762976-04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19040**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID **LCS-19040**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505003-005AMS** SampType: **MS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **SWMU 10-5 (22-24')** Batch ID: **19032** RunNo: **26013**

Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771126** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0117	0.00223	0.01114	0.01785	-55.6	33.4	127			S
Toluene	0.0118	0.00223	0.01114	0.01116	5.42	24.8	130			S
Chlorobenzene	0.0107	0.00223	0.01114	0	96.5	25.8	132			
1,1-Dichloroethene	0.0121	0.00223	0.01114	0	109	70	130			
Trichloroethene (TCE)	0.0112	0.00223	0.01114	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	0.0232		0.02784		83.3	70	130			
Surr: 4-Bromofluorobenzene	0.0258		0.02784		92.6	70	130			
Surr: Dibromofluoromethane	0.0254		0.02784		91.1	70	130			
Surr: Toluene-d8	0.0263		0.02784		94.3	70	130			

Sample ID **1505003-005amsd** SampType: **MSD** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **SWMU 10-5 (22-24')** Batch ID: **19032** RunNo: **26013**

Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771127** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0140	0.00226	0.01129	0.01785	-34.0	33.4	127	18.3	20	S
Toluene	0.0133	0.00226	0.01129	0.01116	19.0	24.8	130	12.3	20	S
Chlorobenzene	0.0121	0.00226	0.01129	0	107	25.8	132	12.0	20	
1,1-Dichloroethene	0.0146	0.00226	0.01129	0	129	70	130	18.7	20	
Trichloroethene (TCE)	0.0137	0.00226	0.01129	0	121	70	130	19.9	20	
Surr: 1,2-Dichloroethane-d4	0.0248		0.02823		87.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0272		0.02823		96.3	70	130	0	0	
Surr: Dibromofluoromethane	0.0274		0.02823		97.0	70	130	0	0	
Surr: Toluene-d8	0.0269		0.02823		95.4	70	130	0	0	

Sample ID **lcs-19032** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **LCSS** Batch ID: **19032** RunNo: **26013**

Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19078**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID:	**19078**	RunNo:	**26010**				
Prep Date:	**5/6/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771069**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19078**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID:	**19078**	RunNo:	**26010**				
Prep Date:	**5/6/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771070**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19080**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772227** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID **LCS-19080**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770909** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **1505003-001B MS**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-5 (0-2')**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770912** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	3.1	15.53	2.485	108	65.2	156			
Surr: BFB	340		310.7		109	67.4	150			

Sample ID **1505003-001B MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-5 (0-2')**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770913** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	3.1	15.53	2.485	103	65.2	156	4.31	20	
Surr: BFB	340		310.7		110	67.4	150	0	0	

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**R25982**		RunNo:	**25982**				
Prep Date:		Analysis Date:	**5/5/2015**		SeqNo:	**771007**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Sample ID	**1505003-005B MS**	SampType:	**MS**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**SWMU 10-5 (22-24')**	Batch ID:	**R25982**		RunNo:	**25982**				
Prep Date:		Analysis Date:	**5/5/2015**		SeqNo:	**771030**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	15	3.5	17.27	0	88.7	65.2	156			
Surr: BFB	380		345.4		111	67.4	150			

Sample ID	**1505003-005B MSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**SWMU 10-5 (22-24')**	Batch ID:	**R25982**		RunNo:	**25982**				
Prep Date:		Analysis Date:	**5/5/2015**		SeqNo:	**771031**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	14	3.5	17.27	0	83.7	65.2	156	5.75	20	
Surr: BFB	380		345.4		109	67.4	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505003** RcptNo: **1**

Received by/date: 04/30/15

Logged By: **Lindsay Mangin** 4/30/2015 3:50:00 PM

Completed By: **Lindsay Mangin** 5/1/2015 6:34:19 AM

Reviewed By: 05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING GW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504003	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1) GRO/DRO & MRO	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1200	SOIL	SWMU 10-5 (0-2')	JARS-2	NEAT	-001			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-001										✓					
	↓	↓	↓	VIALS-2	SOBI	-001										✓					
	1212	SOIL	SWMU 10-5 (2-4')	JARS-2	NEAT	-002			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-002										✓					
	↓	↓	↓	VIALS-2	SOBI	-002										✓					
	1232	SOIL	SWMU 10-5 (4-6')	JARS-2	NEAT	-003			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-003										✓					
	↓	↓	↓	VIALS-2	SOBI	-003										✓					
	1250	SOIL	SWMU 10-5 (14-16')	~~JARS-2~~ VIALS	NEAT	-004			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-004										✓					
↓	↓	↓	↓	VIALS-2	SOBI	-004										✓					

Date	Time	Relinquished by:	Received by:	Date	Time
4.30.15	0800				
4.30.15	1600			04/30/15	1550

Remarks:

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504005	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4-29-15	1310	SOIL	SWMU 10-5 (22-24')	JARS-2	NEAT	-005			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓					
				VIALS-2	SOIL	-005										✓					

Date: 4.30.15 Time: 0800 Relinquished by:
Received by: Date 4-30-15 Time 1300
Date: 4-30-15 Time: 1550 Relinquished by:
Received by: Date 04/30/15 Time 1550

Remarks:

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 08, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505004

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 11, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505004**
Date: **10/8/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Surrogate "S" Flags:
The surrogates were not recoverable in the following samples due to sample dilution and/or matrix interferences:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 3:30:00 PM
Lab ID: 1505004-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	160	26	47		mg/Kg-dr	5	5/7/2015 7:22:44 PM	19040
Motor Oil Range Organics (MRO)	330	240	240		mg/Kg-dr	5	5/7/2015 7:22:44 PM	19040
Surr: DNOP	114	0	57.9-140		%REC	5	5/7/2015 7:22:44 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.034	0.0031	0.035	J	mg/Kg-dr	1	5/6/2015 3:40:56 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Arsenic	1.4	0.68	5.7	J	mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Barium	460	0.068	0.23		mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Beryllium	0.71	0.0085	0.17		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Chromium	14	0.069	0.34		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Cobalt	3.8	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Iron	10000	69	290		mg/Kg-dr	100	5/7/2015 11:10:57 AM	19081
Lead	3.8	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Manganese	440	0.13	0.23		mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Nickel	6.5	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Vanadium	17	0.038	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Zinc	29	0.74	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 3:30:00 PM
Lab ID: 1505004-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.086	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
3,3´-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 3:30:00 PM
Lab ID: 1505004-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Surr: 2-Fluorophenol	61.2		26.4-129		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: Phenol-d5	64.4		34.8-118		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 2,4,6-Tribromophenol	66.9		26.8-128		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: Nitrobenzene-d5	61.0		35.8-124		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 2-Fluorobiphenyl	66.9		24.5-139		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 4-Terphenyl-d14	72.6		29.4-129		%REC	1	5/8/2015 7:50:14 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00118	0.000434	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Toluene	0.00263	0.000200	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Ethylbenzene	0.000703	0.000324	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Xylenes, Total	0.00182	0.00115	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000807	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,4-Trimethylbenzene	0.000770	0.000503	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3,5-Trimethylbenzene	0.000347	0.000338	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000516	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000230	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Naphthalene	ND	0.000629	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1-Methylnaphthalene	ND	0.000756	0.00385		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Methylnaphthalene	ND	0.000752	0.00385		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Acetone	0.0237	0.00120	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromobenzene	ND	0.000536	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 3:30:00 PM
Lab ID: 1505004-001
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000260	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromoform	ND	0.000499	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromomethane	ND	0.00114	0.00289		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Butanone	0.00407	0.000616	0.00963	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Carbon tetrachloride	ND	0.000348	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chlorobenzene	ND	0.000195	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloroform	ND	0.000397	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloromethane	ND	0.000227	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Chlorotoluene	ND	0.000376	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Carbon disulfide	ND	0.000871	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Chlorotoluene	ND	0.000371	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
cis-1,2-DCE	ND	0.000509	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
cis-1,3-Dichloropropene	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000566	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dibromochloromethane	ND	0.000216	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dibromomethane	ND	0.00109	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichlorobenzene	ND	0.000427	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3-Dichlorobenzene	ND	0.000326	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,4-Dichlorobenzene	ND	0.000302	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dichlorodifluoromethane	ND	0.000786	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloroethane	ND	0.000450	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloroethene	ND	0.000321	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichloropropane	ND	0.000411	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3-Dichloropropane	ND	0.000300	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2,2-Dichloropropane	ND	0.000334	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloropropene	ND	0.000353	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Hexachlorobutadiene	ND	0.000388	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Isopropylbenzene	ND	0.000447	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Isopropyltoluene	ND	0.000747	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Methylene chloride	0.000606	0.000476	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
n-Butylbenzene	ND	0.000790	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Hexanone	0.000886	0.000400	0.00963	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
n-Propylbenzene	ND	0.000360	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
sec-Butylbenzene	0.000645	0.000486	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Styrene	ND	0.000319	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Methyl-2-pentanone	ND	0.000813	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
tert-Butylbenzene	ND	0.000295	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000313	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (0-2')
Project: SWMU 10
Collection Date: 4/29/2015 3:30:00 PM
Lab ID: 1505004-001 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000423	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Tetrachloroethene (PCE)	ND	0.000382	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
trans-1,2-DCE	ND	0.000311	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
trans-1,3-Dichloropropene	ND	0.000252	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,3-Trichlorobenzene	ND	0.000704	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,4-Trichlorobenzene	ND	0.000721	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,1-Trichloroethane	ND	0.000274	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,2-Trichloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Trichloroethene (TCE)	ND	0.000383	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Trichlorofluoromethane	ND	0.000389	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,3-Trichloropropane	ND	0.000676	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Vinyl chloride	ND	0.000220	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Surr: 1,2-Dichloroethane-d4	96.7	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: 4-Bromofluorobenzene	95.2	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: Toluene-d8	95.0	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.85	3.4		mg/Kg-dr	1	5/6/2015 12:29:48 AM	R25982
Surr: BFB	111	0	67.4-150		%REC	1	5/6/2015 12:29:48 AM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (2-4')
Project: SWMU 10
Collection Date: 4/29/2015 3:40:00 PM
Lab ID: 1505004-002 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	4100	54	98		mg/Kg-dr	10	5/7/2015 4:40:23 PM	19040
Motor Oil Range Organics (MRO)	690	490	490		mg/Kg-dr	10	5/7/2015 4:40:23 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/7/2015 4:40:23 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	21	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0082	0.0037	0.042	J	mg/Kg-dr	1	5/6/2015 3:42:49 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.7	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Arsenic	1.9	0.37	3.2	J	mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Barium	390	0.076	0.26		mg/Kg-dr	2	5/7/2015 1:44:10 PM	19081
Beryllium	0.98	0.0094	0.19		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Cadmium	ND	0.035	0.13		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Chromium	9.9	0.077	0.38		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Cobalt	4.8	0.048	0.38		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Iron	14000	77	320		mg/Kg-dr	100	5/7/2015 11:12:19 AM	19081
Lead	3.5	0.14	0.32		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Manganese	310	0.075	0.13		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Nickel	8.3	0.16	0.64		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Selenium	ND	2.0	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Silver	ND	0.038	0.32		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Vanadium	20	0.043	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Zinc	16	0.82	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benz(a)anthracene	ND	0.092	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (2-4')
Project: SWMU 10
Collection Date: 4/29/2015 3:40:00 PM
Lab ID: 1505004-002 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
3,3´-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Fluorene	0.22	0.16	0.24	J	mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorocyclopentadiene	ND	0.081	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1-Methylnaphthalene	3.6	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Methylnaphthalene	0.42	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

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Client Sample ID: SWMU 10-4 (2-4')
Project: SWMU 10
Collection Date: 4/29/2015 3:40:00 PM
Lab ID: 1505004-002 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Phenanthrene	0.80	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Surr: 2-Fluorophenol	72.0		26.4-129		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: Phenol-d5	71.2		34.8-118		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 2,4,6-Tribromophenol	40.6		26.8-128		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: Nitrobenzene-d5	73.1		35.8-124		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 2-Fluorobiphenyl	67.6		24.5-139		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 4-Terphenyl-d14	80.2		29.4-129		%REC	1	5/8/2015 8:18:21 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0049	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Toluene	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Ethylbenzene	0.0041	0.0030	0.033	J	mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0046	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,4-Trimethylbenzene	ND	0.0016	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3,5-Trimethylbenzene	0.11	0.0022	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichloroethane (EDC)	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0026	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Naphthalene	ND	0.0078	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1-Methylnaphthalene	2.9	0.020	0.13		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Methylnaphthalene	0.69	0.022	0.13		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Acetone	ND	0.024	0.49		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromobenzene	ND	0.0024	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromodichloromethane	ND	0.0027	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (2-4')
Project: SWMU 10
Collection Date: 4/29/2015 3:40:00 PM
Lab ID: 1505004-002
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0026	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromomethane	ND	0.0063	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Butanone	ND	0.021	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Carbon disulfide	ND	0.024	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Carbon tetrachloride	ND	0.0032	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chlorobenzene	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloroethane	ND	0.025	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloroform	ND	0.0034	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloromethane	ND	0.0038	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Chlorotoluene	ND	0.0037	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Chlorotoluene	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
cis-1,2-DCE	ND	0.0041	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
cis-1,3-Dichloropropene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0056	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dibromochloromethane	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dibromomethane	ND	0.0034	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichlorobenzene	ND	0.0020	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3-Dichlorobenzene	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,4-Dichlorobenzene	ND	0.0041	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dichlorodifluoromethane	ND	0.0082	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloroethane	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloroethene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichloropropane	ND	0.0018	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3-Dichloropropane	ND	0.0045	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2,2-Dichloropropane	ND	0.0048	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloropropene	ND	0.0049	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Hexachlorobutadiene	ND	0.0045	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Hexanone	ND	0.0080	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Isopropylbenzene	ND	0.0028	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Isopropyltoluene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Methyl-2-pentanone	ND	0.0057	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Methylene chloride	ND	0.013	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
n-Butylbenzene	ND	0.0028	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
n-Propylbenzene	ND	0.0024	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
sec-Butylbenzene	ND	0.0047	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Styrene	ND	0.0060	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
tert-Butylbenzene	ND	0.0037	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0027	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0040	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (2-4')
Project: SWMU 10
Collection Date: 4/29/2015 3:40:00 PM
Lab ID: 1505004-002
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0028	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
trans-1,2-DCE	ND	0.0021	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
trans-1,3-Dichloropropene	ND	0.0059	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,3-Trichlorobenzene	ND	0.0070	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,4-Trichlorobenzene	ND	0.0060	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,1-Trichloroethane	ND	0.0050	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,2-Trichloroethane	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Trichloroethene (TCE)	ND	0.0032	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Trichlorofluoromethane	ND	0.0099	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,3-Trichloropropane	ND	0.0055	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Vinyl chloride	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Xylenes, Total	ND	0.0091	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Surr: Dibromofluoromethane	96.7		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: Toluene-d8	93.2		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: 4-Bromofluorobenzene	91.5		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	25	0.82	3.3		mg/Kg-dr	1	5/5/2015 3:52:38 AM	R25941
Surr: BFB	113	0	67.4-150		%REC	1	5/5/2015 3:52:38 AM	R25941

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (6-8')
Project: SWMU 10
Collection Date: 4/29/2015 3:50:00 PM
Lab ID: 1505004-003 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/5/2015 6:50:28 PM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/5/2015 6:50:28 PM	19040
Surr: DNOP	101	0	57.9-140		%REC	1	5/5/2015 6:50:28 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.017	0.0033	0.038	J	mg/Kg-dr	1	5/6/2015 3:44:32 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Arsenic	1.2	0.35	2.9	J	mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Barium	140	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Beryllium	0.84	0.0087	0.18		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Chromium	7.2	0.071	0.35		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Cobalt	4.0	0.045	0.35		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Iron	12000	71	290		mg/Kg-dr	100	5/7/2015 11:13:42 AM	19081
Lead	2.2	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Manganese	270	0.069	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Nickel	6.8	0.15	0.59		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Vanadium	15	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Zinc	13	0.76	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (6-8')
Project: SWMU 10
Collection Date: 4/29/2015 3:50:00 PM
Lab ID: 1505004-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
3,3´-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (6-8')
Project: SWMU 10
Collection Date: 4/29/2015 3:50:00 PM
Lab ID: 1505004-003 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Surr: 2-Fluorophenol	45.2		26.4-129		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: Phenol-d5	46.5		34.8-118		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 2,4,6-Tribromophenol	41.3		26.8-128		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: Nitrobenzene-d5	43.7		35.8-124		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 2-Fluorobiphenyl	42.4		24.5-139		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 4-Terphenyl-d14	55.3		29.4-129		%REC	1	5/8/2015 5:58:11 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00190	0.000345	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Toluene	0.00162	0.000159	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Ethylbenzene	0.000421	0.000258	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Xylenes, Total	0.00118	0.000914	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Methyl tert-butyl ether (MTBE)	0.00139	0.000643	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,4-Trimethylbenzene	0.000406	0.000401	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3,5-Trimethylbenzene	ND	0.000269	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000411	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000183	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Naphthalene	ND	0.000501	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1-Methylnaphthalene	ND	0.000602	0.00307		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Methylnaphthalene	ND	0.000599	0.00307		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Acetone	0.00619	0.000957	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromobenzene	ND	0.000426	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (6-8')
Project: SWMU 10
Collection Date: 4/29/2015 3:50:00 PM
Lab ID: 1505004-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000207	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromoform	ND	0.000397	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromomethane	ND	0.000906	0.00230		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Butanone	0.00153	0.000491	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Carbon tetrachloride	ND	0.000277	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chlorobenzene	ND	0.000155	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloroethane	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloroform	ND	0.000316	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloromethane	ND	0.000181	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Chlorotoluene	ND	0.000299	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Carbon disulfide	ND	0.000694	0.00766		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Chlorotoluene	ND	0.000295	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
cis-1,2-DCE	ND	0.000405	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
cis-1,3-Dichloropropene	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000450	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dibromochloromethane	ND	0.000172	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dibromomethane	ND	0.000870	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichlorobenzene	ND	0.000340	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3-Dichlorobenzene	ND	0.000260	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,4-Dichlorobenzene	ND	0.000241	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dichlorodifluoromethane	ND	0.000626	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloroethane	ND	0.000358	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloroethene	ND	0.000256	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichloropropane	ND	0.000327	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3-Dichloropropane	ND	0.000239	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2,2-Dichloropropane	ND	0.000266	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloropropene	ND	0.000281	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Hexachlorobutadiene	ND	0.000309	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Isopropylbenzene	ND	0.000356	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Isopropyltoluene	ND	0.000595	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Methylene chloride	0.000529	0.000379	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
n-Butylbenzene	ND	0.000629	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Hexanone	0.000559	0.000319	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
n-Propylbenzene	ND	0.000287	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
sec-Butylbenzene	0.000667	0.000387	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Styrene	ND	0.000254	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Methyl-2-pentanone	ND	0.000647	0.00766		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
tert-Butylbenzene	ND	0.000235	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000249	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (6-8')
Project: SWMU 10
Collection Date: 4/29/2015 3:50:00 PM
Lab ID: 1505004-003
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000337	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Tetrachloroethene (PCE)	ND	0.000304	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
trans-1,2-DCE	ND	0.000248	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
trans-1,3-Dichloropropene	ND	0.000200	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,3-Trichlorobenzene	ND	0.000561	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,4-Trichlorobenzene	ND	0.000574	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,1-Trichloroethane	ND	0.000218	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,2-Trichloroethane	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Trichloroethene (TCE)	ND	0.000305	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Trichlorofluoromethane	ND	0.000310	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,3-Trichloropropane	ND	0.000538	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Vinyl chloride	ND	0.000175	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: 4-Bromofluorobenzene	110	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: Dibromofluoromethane	99.5	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: Toluene-d8	93.0	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.82	3.2		mg/Kg-dr	1	5/5/2015 1:26:29 PM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 1:26:29 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (18-20')
Project: SWMU 10
Collection Date: 4/29/2015 4:00:00 PM
Lab ID: 1505004-004 **Matrix:** SOIL **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.7		mg/Kg-dr	1	5/5/2015 7:17:27 PM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/5/2015 7:17:27 PM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/5/2015 7:17:27 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0040	0.0035	0.040	J	mg/Kg-dr	1	5/6/2015 3:46:17 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Arsenic	1.9	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Barium	230	0.034	0.11		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Beryllium	1.0	0.0085	0.17		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Chromium	15	0.069	0.34		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Cobalt	7.4	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Iron	21000	69	290		mg/Kg-dr	100	5/7/2015 11:15:06 AM	19081
Lead	1.7	0.12	0.29		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Manganese	770	0.34	0.57		mg/Kg-dr	5	5/8/2015 2:33:57 PM	19081
Nickel	16	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Vanadium	22	0.038	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Zinc	22	0.74	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Aniline	ND	0.099	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benz(a)anthracene	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzoic acid	ND	0.065	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (18-20')
Project: SWMU 10
Collection Date: 4/29/2015 4:00:00 PM
Lab ID: 1505004-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.087	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chloroaniline	ND	0.11	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
3,3´-Dichlorobenzidine	ND	0.088	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dimethylphenol	ND	0.089	0.34		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dinitrophenol	ND	0.047	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorocyclopentadiene	ND	0.079	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Methylphenol	ND	0.11	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (18-20')
Project: SWMU 10
Collection Date: 4/29/2015 4:00:00 PM
Lab ID: 1505004-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Nitrophenol	ND	0.098	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pentachlorophenol	ND	0.071	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Surr: 2-Fluorophenol	73.9		26.4-129		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: Phenol-d5	73.0		34.8-118		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 2,4,6-Tribromophenol	68.8		26.8-128		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: Nitrobenzene-d5	70.5		35.8-124		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 2-Fluorobiphenyl	74.9		24.5-139		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 4-Terphenyl-d14	83.9		29.4-129		%REC	1	5/7/2015 8:41:44 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0204	0.000418	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Toluene	0.0127	0.000193	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Ethylbenzene	0.00291	0.000312	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Xylenes, Total	0.00975	0.00111	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000777	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,4-Trimethylbenzene	0.00277	0.000484	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3,5-Trimethylbenzene	0.00184	0.000325	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000497	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000222	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Naphthalene	0.000742	0.000606	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1-Methylnaphthalene	ND	0.000728	0.00371		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Methylnaphthalene	ND	0.000724	0.00371		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Acetone	0.00180	0.00116	0.00927	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromobenzene	ND	0.000516	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (18-20')
Project: SWMU 10
Collection Date: 4/29/2015 4:00:00 PM
Lab ID: 1505004-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000250	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromoform	ND	0.000480	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromomethane	ND	0.00110	0.00278		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Butanone	ND	0.000594	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Carbon tetrachloride	ND	0.000336	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chlorobenzene	ND	0.000188	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloroethane	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloroform	ND	0.000382	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloromethane	ND	0.000219	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Chlorotoluene	ND	0.000362	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Carbon disulfide	ND	0.000839	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Chlorotoluene	ND	0.000357	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
cis-1,2-DCE	ND	0.000490	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
cis-1,3-Dichloropropene	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000545	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dibromochloromethane	ND	0.000208	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dibromomethane	ND	0.00105	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichlorobenzene	ND	0.000411	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3-Dichlorobenzene	ND	0.000314	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,4-Dichlorobenzene	ND	0.000291	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dichlorodifluoromethane	ND	0.000757	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloroethane	ND	0.000433	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloroethene	ND	0.000309	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichloropropane	ND	0.000396	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3-Dichloropropane	ND	0.000289	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2,2-Dichloropropane	ND	0.000322	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloropropene	ND	0.000339	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Hexachlorobutadiene	ND	0.000374	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Isopropylbenzene	0.000482	0.000430	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Isopropyltoluene	ND	0.000719	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Methylene chloride	0.000612	0.000458	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
n-Butylbenzene	ND	0.000761	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Hexanone	ND	0.000386	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
n-Propylbenzene	0.000510	0.000347	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
sec-Butylbenzene	0.000714	0.000468	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Styrene	ND	0.000307	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Methyl-2-pentanone	ND	0.000783	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
tert-Butylbenzene	ND	0.000284	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000302	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-4 (18-20')
Project: SWMU 10
Collection Date: 4/29/2015 4:00:00 PM
Lab ID: 1505004-004
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000408	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Tetrachloroethene (PCE)	ND	0.000367	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
trans-1,2-DCE	ND	0.000300	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
trans-1,3-Dichloropropene	ND	0.000242	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,3-Trichlorobenzene	ND	0.000678	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,4-Trichlorobenzene	ND	0.000695	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,1-Trichloroethane	ND	0.000264	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,2-Trichloroethane	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Trichloroethene (TCE)	ND	0.000368	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Trichlorofluoromethane	ND	0.000375	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,3-Trichloropropane	ND	0.000651	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Vinyl chloride	ND	0.000212	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: Dibromofluoromethane	104	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: Toluene-d8	88.5	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.78	3.1		mg/Kg-dr	1	5/6/2015 12:58:35 AM	R25982
Surr: BFB	109	0	67.4-150		%REC	1	5/6/2015 12:58:35 AM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	150	27	49		mg/Kg-dr	5	5/7/2015 9:10:40 PM	19040
Motor Oil Range Organics (MRO)	310	250	250		mg/Kg-dr	5	5/7/2015 9:10:40 PM	19040
Surr: DNOP	114	0	57.9-140		%REC	5	5/7/2015 9:10:40 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.035	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:55:17 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Arsenic	2.7	0.65	5.5	J	mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Barium	380	0.066	0.22		mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Beryllium	0.59	0.0082	0.17		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Chromium	16	0.066	0.33		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Cobalt	3.4	0.042	0.33		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Iron	9100	66	280		mg/Kg-dr	100	5/7/2015 11:24:22 AM	19081
Lead	3.6	0.12	0.28		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Manganese	490	0.13	0.22		mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Nickel	5.6	0.14	0.55		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Vanadium	21	0.037	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Zinc	24	0.71	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	3.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Acenaphthylene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Aniline	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Anthracene	ND	2.3	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Azobenzene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benz(a)anthracene	ND	2.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(a)pyrene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(b)fluoranthene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(g,h,i)perylene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(k)fluoranthene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzoic acid	ND	1.6	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzyl alcohol	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-chloroethoxy)methane	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-chloroisopropyl)ether	ND	2.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-ethylhexyl)phthalate	ND	3.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Bromophenyl phenyl ether	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Butyl benzyl phthalate	ND	3.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Carbazole	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chloro-3-methylphenol	ND	2.7	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chloroaniline	ND	2.5	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Chloronaphthalene	ND	2.9	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Chlorophenol	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chlorophenyl phenyl ether	ND	4.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Chrysene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Di-n-butyl phthalate	ND	3.1	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Di-n-octyl phthalate	ND	3.1	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dibenz(a,h)anthracene	ND	3.0	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dibenzofuran	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,2-Dichlorobenzene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,3-Dichlorobenzene	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,4-Dichlorobenzene	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
3,3´-Dichlorobenzidine	ND	2.1	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Diethyl phthalate	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dimethyl phthalate	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dichlorophenol	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dimethylphenol	ND	2.2	8.3		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4,6-Dinitro-2-methylphenol	ND	1.5	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dinitrophenol	ND	1.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dinitrotoluene	ND	2.5	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,6-Dinitrotoluene	ND	3.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Fluoranthene	ND	3.3	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Fluorene	ND	3.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorobenzene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorobutadiene	ND	2.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorocyclopentadiene	ND	1.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachloroethane	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Indeno(1,2,3-cd)pyrene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Isophorone	ND	2.9	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1-Methylnaphthalene	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Methylnaphthalene	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Methylphenol	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
N-Nitrosodi-n-propylamine	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
N-Nitrosodiphenylamine	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Naphthalene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Nitroaniline	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
3-Nitroaniline	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Nitroaniline	ND	2.5	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Nitrobenzene	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Nitrophenol	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Nitrophenol	ND	2.4	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pentachlorophenol	ND	1.7	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Phenanthrene	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Phenol	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pyrene	ND	3.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pyridine	ND	2.3	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,2,4-Trichlorobenzene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4,5-Trichlorophenol	ND	3.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4,6-Trichlorophenol	ND	3.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/8/2015 8:46:25 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00104	0.000359	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Toluene	0.00232	0.000166	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Ethylbenzene	0.000638	0.000268	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Xylenes, Total	0.00171	0.000951	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000668	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,4-Trimethylbenzene	0.000972	0.000417	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3,5-Trimethylbenzene	0.000422	0.000280	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000427	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000191	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Naphthalene	ND	0.000521	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1-Methylnaphthalene	ND	0.000626	0.00319		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Methylnaphthalene	ND	0.000623	0.00319		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Acetone	0.0166	0.000995	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromobenzene	ND	0.000443	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000215	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromoform	ND	0.000413	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromomethane	ND	0.000942	0.00239		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Butanone	0.00253	0.000510	0.00797	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Carbon tetrachloride	ND	0.000288	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chlorobenzene	ND	0.000162	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloroform	ND	0.000328	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloromethane	ND	0.000188	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Chlorotoluene	ND	0.000311	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Carbon disulfide	ND	0.000721	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Chlorotoluene	ND	0.000307	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
cis-1,2-DCE	ND	0.000422	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
cis-1,3-Dichloropropene	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000468	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dibromochloromethane	ND	0.000179	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dibromomethane	ND	0.000905	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichlorobenzene	ND	0.000354	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3-Dichlorobenzene	ND	0.000270	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,4-Dichlorobenzene	ND	0.000250	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dichlorodifluoromethane	ND	0.000651	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloroethane	ND	0.000372	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloroethene	ND	0.000266	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichloropropane	ND	0.000341	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3-Dichloropropane	ND	0.000248	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2,2-Dichloropropane	ND	0.000277	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloropropene	ND	0.000292	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Hexachlorobutadiene	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Isopropylbenzene	ND	0.000370	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Isopropyltoluene	ND	0.000619	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Methylene chloride	0.000510	0.000394	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
n-Butylbenzene	ND	0.000654	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Hexanone	0.000653	0.000332	0.00797	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
n-Propylbenzene	ND	0.000298	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
sec-Butylbenzene	0.000534	0.000403	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Styrene	ND	0.000264	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Methyl-2-pentanone	ND	0.000673	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
tert-Butylbenzene	ND	0.000244	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000259	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000350	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Tetrachloroethene (PCE)	ND	0.000316	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
trans-1,2-DCE	ND	0.000258	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
trans-1,3-Dichloropropene	ND	0.000208	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,3-Trichlorobenzene	ND	0.000583	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,4-Trichlorobenzene	ND	0.000597	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,1-Trichloroethane	ND	0.000227	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,2-Trichloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Trichloroethene (TCE)	ND	0.000317	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Trichlorofluoromethane	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,3-Trichloropropane	ND	0.000560	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Vinyl chloride	ND	0.000182	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Surr: 1,2-Dichloroethane-d4	99.5	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: Toluene-d8	91.3	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.86	3.4		mg/Kg-dr	1	5/6/2015 1:27:20 AM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/6/2015 1:27:20 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-001C SWMU 10-4 0-2 FT

Project # :

Collected By :
Collection Date : 04/29/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	150		mV	2580 B-2011	05/07/15	1
pH	8.3	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-01 (PH) - 8.3 at 20.2C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-002C SWMU 10-4 2-4 FT

Project # :

Collected By :
Collection Date : 04/29/15 15:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	70.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-02 (PH) - 8.4 at 21.0C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-003C SWMU 10-4 6-8 FT

Project # :

Collected By :
Collection Date : 04/29/15 15:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	90.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-03 (PH) - 8.4 at 20.7C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-04

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-004C SWMU 10-4 18-20 FT

Project # :

Collected By :
Collection Date : 04/29/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/13/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	80.		mV	2580 B-2011	05/10/15	1
pH	9.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-04 (PH) - 9.4 at 20.4C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-05

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-005C SWMU 10 DUP01

Project # :

Collected By :
Collection Date : 04/29/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	90.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-05 (PH) - 8.4 at 20.9C

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

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Quality Assurance Report
Level II

L762970

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg			WG786845	05/07/15 05:34
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23
Cyanide	< .25	mg/kg			WG788554	05/13/15 13:12

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762970-04	WG786845
pH	su	7.80	7.80	0.385	1	L762507-04	WG787133
pH	su	8.00	8.10	1.12*	1	L763345-03	WG787133
ORP	mV	100.	100.	0.0	20	L762539-05	WG787164
ORP	mV	150.	150.	0.0	20	L762970-01	WG787164
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733
Cyanide	mg/kg	0.320	0.320	0.0	20	L764359-01	WG788554

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium, Hexavalent	mg/kg	59.8	65.2	109.	80-120	WG786845
pH	su	7.84	7.82	99.7	98.3-101.7	WG787133
ORP	mV	100	105.	105.	90-110	WG787164
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733
Cyanide	mg/kg	101	112.	111.	50-150	WG788554

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium, Hexavalent	mg/kg	65.8	65.2	110.	80-120	0.916	20	WG786845
pH	su	7.81	7.82	100.	98.3-101.7	0.128	20	WG787133

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762970

May 13, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
ORP	mV	105.	105.	105.	90-110	0.0	20	WG787164
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733
Cyanide	mg/kg	122.	112.	121.	50-150	8.55	20	WG788554

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.8	0.0	20	100.	75-125	L762970-04	WG786845
Cyanide	mg/kg	3.18	0.0	3.33	95.0	80-120	L762970-04	WG788554

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.8	20.8	104.	75-125	0.0	20	L762970-04	WG786845
Cyanide	mg/kg	3.50	3.18	105.	80-120	9.58	20	L762970-04	WG788554

Batch number /Run number / Sample number cross reference

WG786845: R3035419: L762970-01 02 03 04 05
WG787133: R3035650: L762970-01 02 03 04 05
WG787164: R3035850: L762970-01
WG787860: R3036066: L762970-02 03 04 05
WG787733: R3036388: L762970-01 02 03 05
WG788554: R3036700: L762970-04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19040**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**PBS**	Batch ID:	**19040**	RunNo:	**25952**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID	**LCS-19040**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**LCSS**	Batch ID:	**19040**	RunNo:	**25952**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Sample ID **lcs-19107**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19078**	SampType: **MBLK**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID: **19078**			RunNo: **26010**				
Prep Date:	**5/6/2015**	Analysis Date: **5/6/2015**			SeqNo: **771069**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19078**	SampType: **LCS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID: **19078**			RunNo: **26010**				
Prep Date:	**5/6/2015**	Analysis Date: **5/6/2015**			SeqNo: **771070**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Sample ID	**1505004-004BMS**	SampType: **MS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**SWMU 10-4 (18-20')**	Batch ID: **19078**			RunNo: **26010**				
Prep Date:	**5/6/2015**	Analysis Date: **5/6/2015**			SeqNo: **771089**		Units: **mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.035	0.1792	0.003959	104	75	125			

Sample ID	**1505004-004BMSD**	SampType: **MSD**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**SWMU 10-4 (18-20')**	Batch ID: **19078**			RunNo: **26010**				
Prep Date:	**5/6/2015**	Analysis Date: **5/6/2015**			SeqNo: **771090**		Units: **mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.20	0.036	0.1808	0.003959	107	75	125	3.16	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-19081**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19081**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772230** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID **MB-19081**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19081**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772232** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770909** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505004 RcptNo: 1

Received by/date: 04/30/15

Logged By: **Lindsay Mangin** 4/30/2015 3:50:00 PM

Completed By: **Lindsay Mangin** 5/1/2015 6:39:41 AM

Reviewed By: 05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504004	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1) GRO/DRO & MRO	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4-29-15	1530	SOIL	SWMU 10-4 (0-2')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MEOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1540	SOIL	SWMU 10-4 (2-4')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MEOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1550	SOIL	SWMU 10-4 (6-8')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MEOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	1600	SOIL	SWMU 10-4 (18-20')	JARS-2	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MEOH	-004										✓					
				VIALS-2	SOBI	-004										✓					

Date	Time	Relinquished by:	Received by:	Date	Time
4-30-15	0800			4-30-15	1300
4-30-15	1550			04/30/15	1550

Remarks:

Any subcontracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505004	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals and Cyanide	(See attached sheet)			Air Bubbles (Y or N)
4.29.15	—	SOIL	SWMU 10 DUP01	JARS-2	NEAT	-005			✓							✓	✓	✓				
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓						
				VIALS-2	SOBI	-005										✓						

GRO/DRO
AMRO

Remarks:

Date	Time	Relinquished by:	Received by:	Date	Time
4.30.15	0800			4/30/15	1500
4/30/15	1550			04/30/15	1550

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 05, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505005

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 12, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3-GW
Project: SWMU 10
Collection Date: 4/29/2015 6:00:00 PM
Lab ID: 1505005-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 7:07:28 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 7:07:28 PM	18985
Surr: DNOP	110	0	76.5-150		%REC	1	5/1/2015 7:07:28 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.033	0.012	0.050	J	mg/L	1	5/4/2015 9:23:36 PM	R25939
Surr: BFB	168	0	80-120	S	%REC	1	5/4/2015 9:23:36 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.29	1.0		mg/L	10	5/6/2015 8:26:50 PM	R26026
Chloride	7100	67	250		mg/L	500	5/6/2015 8:39:15 PM	R26026
Sulfate	1100	57	250		mg/L	500	5/6/2015 8:39:15 PM	R26026
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.23	0.00095	0.0020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Beryllium	0.00040	0.00031	0.0020	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Chromium	0.0056	0.0018	0.0060	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Cobalt	0.0081	0.0013	0.0060		mg/L	1	5/6/2015 6:57:44 PM	R26030
Iron	0.068	0.0073	0.020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Manganese	0.45	0.00027	0.0020	*	mg/L	1	5/6/2015 6:57:44 PM	R26030
Nickel	0.0053	0.0021	0.010	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:57:44 PM	R26030
Vanadium	0.0048	0.0015	0.050	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Zinc	0.033	0.0028	0.010		mg/L	1	5/6/2015 6:57:44 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.28	0.00095	0.0020		mg/L	1	5/5/2015 5:27:16 PM	19025
Beryllium	0.00091	0.00031	0.0020	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Cadmium	ND	0.00097	0.0020		mg/L	1	5/5/2015 5:27:16 PM	19025
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:27:16 PM	19025
Cobalt	0.0059	0.0013	0.0060	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Iron	2.6	0.036	0.10	*	mg/L	5	5/6/2015 5:05:18 PM	19025
Manganese	0.52	0.0015	0.0020	*	mg/L	1	5/5/2015 5:27:16 PM	19025
Nickel	0.0067	0.0023	0.010	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Silver	ND	0.0021	0.0050		mg/L	1	5/5/2015 5:27:16 PM	19025
Vanadium	0.010	0.0015	0.050	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Zinc	0.023	0.0036	0.010		mg/L	1	5/6/2015 4:59:28 PM	19025
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00074	0.00071	0.0050	J	mg/L	5	5/11/2015 2:39:36 PM	R26119
Arsenic	0.011	0.0032	0.050	J*	mg/L	50	5/12/2015 4:59:58 PM	R26138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

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Project: SWMU 10
Collection Date: 4/29/2015 6:00:00 PM
Lab ID: 1505005-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.00013	0.0050		mg/L	5	5/11/2015 2:39:36 PM	R26119
Selenium	0.041	0.0097	0.050	J	mg/L	50	5/12/2015 4:59:58 PM	R26138
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.0013	0.0011	0.0050	J	mg/L	5	5/8/2015 2:04:48 PM	19025
Arsenic	ND	0.022	0.050		mg/L	50	5/13/2015 5:29:34 PM	19025
Lead	0.0024	0.00034	0.0050	J	mg/L	5	5/8/2015 2:04:48 PM	19025
Selenium	0.036	0.0061	0.050	J	mg/L	50	5/13/2015 5:29:34 PM	19025
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:23:50 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:59:02 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996

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Client Sample ID: SWMU 10-3-GW
Project: SWMU 10
Collection Date: 4/29/2015 6:00:00 PM
Lab ID: 1505005-001 **Matrix:** AQUEOUS **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Surr: 2-Fluorophenol	30.7	0	14.9-111		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: Phenol-d5	31.8	0	11.3-108		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 2,4,6-Tribromophenol	29.8	0	15.7-154		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: Nitrobenzene-d5	84.1	0	47.8-106		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 2-Fluorobiphenyl	74.7	0	21.3-123		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 4-Terphenyl-d14	58.1	0	14.3-135		%REC	1	5/5/2015 9:59:02 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	2.9	0.065	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Methyl tert-butyl ether (MTBE)	5.5	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichloroethane (EDC)	0.48	0.18	1.0	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Butanone	1.4	0.36	10	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017

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Lab ID: 1505005-001 **Matrix:** AQUEOUS **Received Date:** 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
n-Propylbenzene	0.31	0.16	1.0	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:02:32 PM	R26017
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-3-GW
Project: SWMU 10
Collection Date: 4/29/2015 6:00:00 PM
Lab ID: 1505005-001
Matrix: AQUEOUS
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	94.6	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017
Surr: Toluene-d8	98.0	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505005-002
Matrix: TRIP BLANK
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505005-002
Matrix: TRIP BLANK
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:30:05 PM	R26017
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: 4-Bromofluorobenzene	96.3	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: Dibromofluoromethane	94.4	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: Toluene-d8	95.3	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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Mt. Juliet, TN 37122
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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762968-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505005-001H SWMU 10-3-GW

Project # :

Collected By :
Collection Date : 04/29/15 18:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.14	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762968-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505005-001I SWMU 10-3-GW

Project # :

Collected By :
Collection Date : 04/29/15 18:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

ESC
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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762968

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762968-01
WG788013: R3036316: L762968-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19025**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**19025**	RunNo:	**25975**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID	**LCS-19025**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19025**	RunNo:	**25975**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769761** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.48	0.020	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			

Sample ID	**MB-19025**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**19025**	RunNo:	**25986**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.0068	0.010								J

Sample ID	**LCS-19025**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19025**	RunNo:	**25986**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505005-001GMS**	SampType:	**MS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**SWMU 10-3-GW**	Batch ID:	**19025**	RunNo:	**25975**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770329** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.68	0.0020	0.5000	0.2804	80.2	70	130			
Beryllium	0.45	0.0020	0.5000	0.0009100	89.2	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.2	70	130			
Chromium	0.44	0.0060	0.5000	0	87.4	70	130			
Cobalt	0.43	0.0060	0.5000	0.005930	85.0	70	130			
Manganese	0.90	0.0020	0.5000	0.5168	75.8	70	130			
Nickel	0.42	0.010	0.5000	0.006710	83.3	70	130			
Silver	0.10	0.0050	0.1000	0	104	70	130			
Vanadium	0.47	0.050	0.5000	0.01041	91.3	70	130			

Sample ID	**1505005-001GMSD**	SampType:	**MSD**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**SWMU 10-3-GW**	Batch ID:	**19025**	RunNo:	**25975**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770330** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.70	0.0020	0.5000	0.2804	83.2	70	130	2.20	20	
Beryllium	0.46	0.0020	0.5000	0.0009100	91.0	70	130	1.98	20	
Cadmium	0.49	0.0020	0.5000	0	98.8	70	130	1.70	20	
Chromium	0.44	0.0060	0.5000	0	89.0	70	130	1.75	20	
Cobalt	0.44	0.0060	0.5000	0.005930	86.6	70	130	1.86	20	
Manganese	0.92	0.0020	0.5000	0.5168	80.8	70	130	2.78	20	
Nickel	0.43	0.010	0.5000	0.006710	84.7	70	130	1.60	20	
Silver	0.11	0.0050	0.1000	0	106	70	130	1.69	20	
Vanadium	0.48	0.050	0.5000	0.01041	92.9	70	130	1.79	20	

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**R26030**	RunNo:	**26030**
Prep Date:		Analysis Date:	**5/6/2015**	SeqNo:	**771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID **1505005-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10-3-GW**	Batch ID: **19025**	RunNo: **26030**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771691** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.41	0.010	0.5000	0.02308	77.0	70	130			

Sample ID **1505005-001GMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10-3-GW**	Batch ID: **19025**	RunNo: **26030**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771692** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.42	0.010	0.5000	0.02308	79.1	70	130	2.63	20	

Sample ID **1505005-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10-3-GW**	Batch ID: **19025**	RunNo: **26030**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771694** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.1	0.10	0.5000	2.596	105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505005-001GMSD**	SampType:	**MSD**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**SWMU 10-3-GW**	Batch ID:	**19025**	RunNo:	**26030**
Prep Date:	**5/4/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771695** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.1	0.10	0.5000	2.596	96.7	70	130	1.40	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19025**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **19025**			RunNo: **25987**				
Prep Date:	**5/4/2015**	Analysis Date: **5/5/2015**			SeqNo: **770247**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID	**MB-19025**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **19025**			RunNo: **25987**				
Prep Date:	**5/4/2015**	Analysis Date: **5/5/2015**			SeqNo: **770248**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774818**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774819**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774821**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID: **R26119**			RunNo: **26119**				
Prep Date:		Analysis Date: **5/11/2015**			SeqNo: **774822**	Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775338** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**				
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	90	110			
Chloride	4.9	0.50	5.000	0	97.9	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768862**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768863**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcsd-18996**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**18996**	RunNo:	**25988**					
Prep Date:	**5/1/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**770338**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505005 RcptNo: 1

Received by/date: 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:42:31 AM

Reviewed By: CS 05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504005	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) MRO	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	8310 (PNA or PAH)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	GEN CHEM	CRG		Air Bubbles (Y or N)
4.29.15	1800	WATER	SWMU 10-3-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500ML PLASTIC-1	NaOH	-001							✓									
				50 ML PLASTIC-1	NH_4	-001														✓		
4.29.15	—	WATER	TRIP BLANK	40 ML VOA-2	HCL	-002										✓						

Date	Time	Relinquished by:	Received by:	Date	Time
4.30.15	0800			4/30/15	1300
Date	Time	Relinquished by:	Received by:	Date	Time
4/30/15	1550			04/30/15	1550

Remarks:

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 08, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505047

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB04
Project: SWMU 10
Collection Date: 5/1/2015 11:00:00 AM
Lab ID: 1505047-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/4/2015 11:46:11 PM	19038
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/4/2015 11:46:11 PM	19038
Surr: DNOP	99.2	0	76.5-150		%REC	1	5/4/2015 11:46:11 PM	19038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 9:52:53 PM	R25939
Surr: BFB	91.2	0	80-120		%REC	1	5/4/2015 9:52:53 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/4/2015 2:12:38 PM	R25965
Chloride	ND	0.13	0.50		mg/L	1	5/4/2015 2:12:38 PM	R25965
Sulfate	ND	0.11	0.50		mg/L	1	5/4/2015 2:12:38 PM	R25965
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Chromium	ND	0.0018	0.0060		mg/L	1	5/7/2015 3:46:51 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:46:51 PM	R26052
Iron	0.015	0.0073	0.020	J	mg/L	1	5/7/2015 3:46:51 PM	R26052
Manganese	0.00038	0.00027	0.0020	J	mg/L	1	5/7/2015 3:46:51 PM	R26052
Nickel	ND	0.0021	0.010		mg/L	1	5/7/2015 3:46:51 PM	R26052
Silver	ND	0.0012	0.0050		mg/L	1	5/13/2015 1:29:03 PM	R26155
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:46:51 PM	R26052
Zinc	0.038	0.0028	0.010		mg/L	1	5/7/2015 3:46:51 PM	R26052
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Beryllium	ND	0.00031	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 5:13:02 PM	R26030
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:38:53 PM	R25986
Cobalt	ND	0.0013	0.0060		mg/L	1	5/5/2015 5:38:53 PM	R25986
Iron	ND	0.0073	0.020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Manganese	ND	0.0015	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Nickel	ND	0.0023	0.010		mg/L	1	5/5/2015 5:38:53 PM	R25986
Silver	ND	0.0021	0.0050		mg/L	1	5/6/2015 5:13:02 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:38:53 PM	R25986
Zinc	ND	0.0036	0.010		mg/L	1	5/5/2015 5:38:53 PM	R25986
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00028	0.00014	0.0010	J	mg/L	1	5/11/2015 2:50:21 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB04
Project: SWMU 10
Collection Date: 5/1/2015 11:00:00 AM
Lab ID: 1505047-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.000026	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00022	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 1:45:48 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/11/2015 2:09:02 PM	19154
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Acenaphthylene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Aniline	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Anthracene	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Azobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzoic acid	ND	1.0	20		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzyl alcohol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Carbazole	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chloroaniline	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Chlorophenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Chrysene	ND	2.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB04
Project: SWMU 10
Collection Date: 5/1/2015 11:00:00 AM
Lab ID: 1505047-001 **Matrix:** AQUEOUS **Received Date:** 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Diethyl phthalate	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Fluoranthene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Fluorene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachloroethane	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Isophorone	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Methylphenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Naphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Nitroaniline	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3-Nitroaniline	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Nitroaniline	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Nitrobenzene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Nitrophenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Nitrophenol	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Pentachlorophenol	ND	1.1	20		µg/L	1	5/8/2015 5:02:20 PM	19045
Phenanthrene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Phenol	ND	1.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Pyrene	ND	2.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB04
Project: SWMU 10
Collection Date: 5/1/2015 11:00:00 AM
Lab ID: 1505047-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Surr: 2-Fluorophenol	57.2	0	14.9-111		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: Phenol-d5	52.8	0	11.3-108		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 2,4,6-Tribromophenol	84.0	0	15.7-154		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: Nitrobenzene-d5	67.4	0	47.8-106		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 2-Fluorobiphenyl	81.5	0	21.3-123		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 4-Terphenyl-d14	104	0	14.3-135		%REC	1	5/8/2015 5:02:20 PM	19045
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Toluene	0.11	0.11	1.0	J	µg/L	1	5/6/2015 3:57:40 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Acetone	3.1	0.94	10	J	µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB04
Project: SWMU 10
Collection Date: 5/1/2015 11:00:00 AM
Lab ID: 1505047-001 **Matrix:** AQUEOUS **Received Date:** 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:57:40 PM	R26017
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB04
Project: SWMU 10
Collection Date: 5/1/2015 11:00:00 AM
Lab ID: 1505047-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	103	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017
Surr: Toluene-d8	101	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762964-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505047-001H SWMU 10 EB04

Project # :

Collected By :
Collection Date : 05/01/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762964-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505047-001I SWMU 10 EB04

Project # :

Collected By :
Collection Date : 05/01/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	0.00051	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762964

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762964-01
WG788013: R3036316: L762964-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770117** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.092	0.0050	0.1000	0	92.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774818**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774819**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774821**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774822**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19154**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19154**	RunNo:	**26107**				
Prep Date:	**5/11/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774364**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19154**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19154**	RunNo:	**26107**				
Prep Date:	**5/11/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774365**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.7	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R25965**	RunNo:	**25965**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**769526**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R25965**	RunNo:	**25965**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**769527**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.526	0.100	0.5000	0	105	90	110			
Chloride	4.88	0.500	5.000	0	97.6	90	110			
Sulfate	9.91	0.500	10.00	0	99.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19038**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19038**	RunNo: **25918**
Prep Date: **5/4/2015**	Analysis Date: **5/4/2015**	SeqNo: **768890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.92		1.000		92.1	76.5	150			

Sample ID **LCS-19038**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19038**	RunNo: **25918**
Prep Date: **5/4/2015**	Analysis Date: **5/4/2015**	SeqNo: **768891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	60.1	156			
Surr: DNOP	0.49		0.5000		97.5	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768862**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768863**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19045**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19045**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.4	14.9	111			
Surr: Phenol-d5	170		200.0		83.9	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		103	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		85.8	47.8	106			
Surr: 2-Fluorobiphenyl	91		100.0		91.2	21.3	123			
Surr: 4-Terphenyl-d14	78		100.0		78.4	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19045**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773643** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	47.8	99.7			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	58.1	103			
2-Chlorophenol	110	10	200.0	0	55.9	49.5	96.8			
1,4-Dichlorobenzene	57	10	100.0	0	57.1	40.4	89.4			
2,4-Dinitrotoluene	62	10	100.0	0	62.4	38.6	91.3			
N-Nitrosodi-n-propylamine	72	10	100.0	0	72.1	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	78.9	26.4	108			
Pentachlorophenol	130	20	200.0	0	65.5	36.5	86.6			
Phenol	120	10	200.0	0	58.2	29.3	108			
Pyrene	70	10	100.0	0	70.3	45.7	100			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.3	94.5			
Surr: 2-Fluorophenol	120		200.0		61.3	14.9	111			
Surr: Phenol-d5	130		200.0		65.4	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		63.8	47.8	106			
Surr: 2-Fluorobiphenyl	70		100.0		70.5	21.3	123			
Surr: 4-Terphenyl-d14	66		100.0		66.5	14.3	135			

Sample ID **lcsd-19045**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	47.8	99.7	2.47	28.2	
4-Chloro-3-methylphenol	140	10	200.0	0	69.1	58.1	103	1.77	24.4	
2-Chlorophenol	120	10	200.0	0	58.0	49.5	96.8	3.65	28.1	
1,4-Dichlorobenzene	60	10	100.0	0	60.0	40.4	89.4	5.06	31.2	
2,4-Dinitrotoluene	60	10	100.0	0	60.4	38.6	91.3	3.26	44.4	
N-Nitrosodi-n-propylamine	68	10	100.0	0	68.4	53.9	95.6	5.27	24.2	
4-Nitrophenol	150	10	200.0	0	75.0	26.4	108	5.00	36.6	
Pentachlorophenol	150	20	200.0	0	73.3	36.5	86.6	11.3	29.5	
Phenol	120	10	200.0	0	62.1	29.3	108	6.48	30	
Pyrene	78	10	100.0	0	78.0	45.7	100	10.3	31	
1,2,4-Trichlorobenzene	69	10	100.0	0	68.6	39.3	94.5	3.80	24	
Surr: 2-Fluorophenol	130		200.0		63.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		67.7	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	61		100.0		61.2	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcsd-19045**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**19045**	RunNo:	**26094**					
Prep Date:	**5/5/2015**	Analysis Date:	**5/8/2015**	SeqNo:	**773644**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	74		100.0		74.0	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505047** RcptNo: 1

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** 5/1/2015 1:48:00 PM

Completed By: **Lindsay Mangin** 5/1/2015 3:04:46 PM

Reviewed By: JA 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)

Adjusted? no

Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks: For 300 analysis, Poured off from a 1L unpreserved amber. CS 05/04/15

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505047	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	GEN CHEM	CR6		Air Bubbles (Y or N)
5.1.15	1100	WATER	SWMU 10 EB04	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NAOH	-001							✓									
		WATER		50 ML PLASTIC-1	$NH_4 2SO_4$	-001													✓			

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.1.15	1118			5/1/15	11:18
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-1-15	13:48			05/01/15	13:48

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 08, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505048

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB03
Project: SWMU 10
Collection Date: 4/30/2015 12:05:00 PM
Lab ID: 1505048-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/5/2015 12:13:09 AM	19038
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/5/2015 12:13:09 AM	19038
Surr: DNOP	96.5	0	76.5-150		%REC	1	5/5/2015 12:13:09 AM	19038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 10:22:08 PM	R25939
Surr: BFB	89.2	0	80-120		%REC	1	5/4/2015 10:22:08 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/4/2015 2:37:28 PM	R25965
Chloride	ND	0.13	0.50		mg/L	1	5/4/2015 2:37:28 PM	R25965
Sulfate	ND	0.11	0.50		mg/L	1	5/4/2015 2:37:28 PM	R25965
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Chromium	ND	0.0018	0.0060		mg/L	1	5/7/2015 3:48:54 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:48:54 PM	R26052
Iron	0.0094	0.0073	0.020	J	mg/L	1	5/7/2015 3:48:54 PM	R26052
Manganese	0.00044	0.00027	0.0020	J	mg/L	1	5/7/2015 3:48:54 PM	R26052
Nickel	ND	0.0021	0.010		mg/L	1	5/7/2015 3:48:54 PM	R26052
Silver	0.0018	0.0012	0.0050	J	mg/L	1	5/13/2015 1:31:04 PM	R26155
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:48:54 PM	R26052
Zinc	0.078	0.0028	0.010		mg/L	1	5/7/2015 3:48:54 PM	R26052
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Beryllium	ND	0.00031	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 5:15:07 PM	R26030
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:40:50 PM	R25986
Cobalt	ND	0.0013	0.0060		mg/L	1	5/5/2015 5:40:50 PM	R25986
Iron	ND	0.0073	0.020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Manganese	ND	0.0015	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Nickel	ND	0.0023	0.010		mg/L	1	5/5/2015 5:40:50 PM	R25986
Silver	ND	0.0021	0.0050		mg/L	1	5/6/2015 5:15:07 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:40:50 PM	R25986
Zinc	ND	0.0036	0.010		mg/L	1	5/5/2015 5:40:50 PM	R25986
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00033	0.00014	0.0010	J	mg/L	1	5/11/2015 2:55:43 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:55:43 PM	R26119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB03
Project: SWMU 10
Collection Date: 4/30/2015 12:05:00 PM
Lab ID: 1505048-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	0.000046	0.000026	0.0010	J	mg/L	1	5/11/2015 2:55:43 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:55:43 PM	R26119
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00022	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 1:51:10 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/11/2015 2:10:49 PM	19154
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Acenaphthylene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Aniline	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Anthracene	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Azobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzoic acid	ND	1.0	20		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzyl alcohol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Carbazole	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chloroaniline	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Chlorophenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Chrysene	ND	2.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Di-n-octyl phthalate	2.3	1.9	10	J	µg/L	1	5/8/2015 5:30:17 PM	19045
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB03
Project: SWMU 10
Collection Date: 4/30/2015 12:05:00 PM
Lab ID: 1505048-001 **Matrix:** AQUEOUS **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Diethyl phthalate	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Fluoranthene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Fluorene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachloroethane	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Isophorone	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Methylphenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Naphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Nitroaniline	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3-Nitroaniline	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Nitroaniline	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Nitrobenzene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Nitrophenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Nitrophenol	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Pentachlorophenol	ND	1.1	20		µg/L	1	5/8/2015 5:30:17 PM	19045
Phenanthrene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Phenol	ND	1.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Pyrene	ND	2.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB03
Project: SWMU 10
Collection Date: 4/30/2015 12:05:00 PM
Lab ID: 1505048-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Surr: 2-Fluorophenol	67.4	0	14.9-111		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: Phenol-d5	61.1	0	11.3-108		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 2,4,6-Tribromophenol	76.7	0	15.7-154		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: Nitrobenzene-d5	83.3	0	47.8-106		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 2-Fluorobiphenyl	81.0	0	21.3-123		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 4-Terphenyl-d14	87.8	0	14.3-135		%REC	1	5/8/2015 5:30:17 PM	19045
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Toluene	0.11	0.11	1.0	J	µg/L	1	5/6/2015 4:25:14 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB03
Project: SWMU 10
Collection Date: 4/30/2015 12:05:00 PM
Lab ID: 1505048-001 **Matrix:** AQUEOUS **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 4:25:14 PM	R26017
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017
Surr: 4-Bromofluorobenzene	97.7	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB03
Project: SWMU 10
Collection Date: 4/30/2015 12:05:00 PM
Lab ID: 1505048-001
Matrix: AQUEOUS
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	95.1	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017
Surr: Toluene-d8	95.1	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762966-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505048-001H SWMU 10 EB03

Project # :

Collected By :
Collection Date : 04/30/15 12:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 08:18 Printed: 05/12/15 08:18

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762966

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762966-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770117** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.092	0.0050	0.1000	0	92.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774818**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774819**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774821**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26119**	RunNo:	**26119**					
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774822**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19154**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19154**	RunNo:	**26107**				
Prep Date:	**5/11/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774364**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19154**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19154**	RunNo:	**26107**				
Prep Date:	**5/11/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774365**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.7	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R25965**	RunNo:	**25965**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**769526**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R25965**	RunNo:	**25965**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**769527**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.526	0.100	0.5000	0	105	90	110			
Chloride	4.88	0.500	5.000	0	97.6	90	110			
Sulfate	9.91	0.500	10.00	0	99.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19038**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range**					
Client ID:	**PBW**	Batch ID:	**19038**	RunNo:	**25918**					
Prep Date:	**5/4/2015**	Analysis Date:	**5/4/2015**	SeqNo:	**768890**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.92		1.000		92.1	76.5	150			

Sample ID	**LCS-19038**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range**					
Client ID:	**LCSW**	Batch ID:	**19038**	RunNo:	**25918**					
Prep Date:	**5/4/2015**	Analysis Date:	**5/4/2015**	SeqNo:	**768891**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	60.1	156			
Surr: DNOP	0.49		0.5000		97.5	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768862**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R25939**	RunNo:	**25939**					
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**768863**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**						
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19045**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19045**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.4	14.9	111			
Surr: Phenol-d5	170		200.0		83.9	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		103	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		85.8	47.8	106			
Surr: 2-Fluorobiphenyl	91		100.0		91.2	21.3	123			
Surr: 4-Terphenyl-d14	78		100.0		78.4	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19045**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773643** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	47.8	99.7			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	58.1	103			
2-Chlorophenol	110	10	200.0	0	55.9	49.5	96.8			
1,4-Dichlorobenzene	57	10	100.0	0	57.1	40.4	89.4			
2,4-Dinitrotoluene	62	10	100.0	0	62.4	38.6	91.3			
N-Nitrosodi-n-propylamine	72	10	100.0	0	72.1	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	78.9	26.4	108			
Pentachlorophenol	130	20	200.0	0	65.5	36.5	86.6			
Phenol	120	10	200.0	0	58.2	29.3	108			
Pyrene	70	10	100.0	0	70.3	45.7	100			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.3	94.5			
Surr: 2-Fluorophenol	120		200.0		61.3	14.9	111			
Surr: Phenol-d5	130		200.0		65.4	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		63.8	47.8	106			
Surr: 2-Fluorobiphenyl	70		100.0		70.5	21.3	123			
Surr: 4-Terphenyl-d14	66		100.0		66.5	14.3	135			

Sample ID **lcsd-19045**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	47.8	99.7	2.47	28.2	
4-Chloro-3-methylphenol	140	10	200.0	0	69.1	58.1	103	1.77	24.4	
2-Chlorophenol	120	10	200.0	0	58.0	49.5	96.8	3.65	28.1	
1,4-Dichlorobenzene	60	10	100.0	0	60.0	40.4	89.4	5.06	31.2	
2,4-Dinitrotoluene	60	10	100.0	0	60.4	38.6	91.3	3.26	44.4	
N-Nitrosodi-n-propylamine	68	10	100.0	0	68.4	53.9	95.6	5.27	24.2	
4-Nitrophenol	150	10	200.0	0	75.0	26.4	108	5.00	36.6	
Pentachlorophenol	150	20	200.0	0	73.3	36.5	86.6	11.3	29.5	
Phenol	120	10	200.0	0	62.1	29.3	108	6.48	30	
Pyrene	78	10	100.0	0	78.0	45.7	100	10.3	31	
1,2,4-Trichlorobenzene	69	10	100.0	0	68.6	39.3	94.5	3.80	24	
Surr: 2-Fluorophenol	130		200.0		63.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		67.7	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	61		100.0		61.2	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**lcsd-19045**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **19045**		RunNo: **26094**					
Prep Date:	**5/5/2015**	Analysis Date: **5/8/2015**		SeqNo: **773644**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	74		100.0		74.0	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505048** RcptNo: **1**

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:50:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 9:43:07 AM**

Reviewed By: 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2, 12 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? no
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks: For 300 analysis, poured off from a 1L unpreserved amber. CS 05/04/15

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505048	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	GEN CHEM			Air Bubbles (Y or N)
5.3015	1205	WATER	SWMU 10 EB03	40 ML VOA-G	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500ML PLASTIC-1	NaOH	-001							✓									
				~~50ML PLASTIC-1~~	~~$NH_4 2SO_4$~~	-																

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.1.15	0730			5/1/15	11/39
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-1-15	1350			05/01/15	1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 08, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505057

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505057**
Date: **10/8/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 1:50:00 PM
Lab ID: 1505057-001 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	210	5.4	9.7		mg/Kg-dr	1	5/7/2015 6:01:28 PM	19001
Motor Oil Range Organics (MRO)	170	48	48		mg/Kg-dr	1	5/7/2015 6:01:28 PM	19001
Surr: DNOP	112	0	57.9-140		%REC	1	5/7/2015 6:01:28 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.070	0.016	0.18	J	mg/Kg-dr	5	5/29/2015 1:09:09 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Arsenic	1.8	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Barium	220	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Beryllium	0.77	0.0086	0.17		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Chromium	17	0.070	0.35		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Cobalt	4.6	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Iron	12000	70	290		mg/Kg-dr	100	5/7/2015 11:25:45 AM	19081
Lead	4.8	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Manganese	180	0.068	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Nickel	7.7	0.15	0.58		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Vanadium	18	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Zinc	24	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Acenaphthylene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Aniline	ND	0.87	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Anthracene	ND	0.85	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Azobenzene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benz(a)anthracene	ND	0.78	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(a)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(b)fluoranthene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(g,h,i)perylene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(k)fluoranthene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzoic acid	ND	0.57	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzyl alcohol	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-chloroethoxy)methane	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.99	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.76	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-ethylhexyl)phthalate	1.5	1.1	5.0	J	mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Bromophenyl phenyl ether	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Butyl benzyl phthalate	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Carbazole	ND	0.93	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chloro-3-methylphenol	ND	0.99	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chloroaniline	ND	0.92	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Chloronaphthalene	ND	1.1	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Chlorophenol	ND	0.93	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chlorophenyl phenyl ether	ND	1.5	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Chrysene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Di-n-butyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Di-n-octyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dibenz(a,h)anthracene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dibenzofuran	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,2-Dichlorobenzene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,3-Dichlorobenzene	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,4-Dichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
3,3´-Dichlorobenzidine	ND	0.77	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Diethyl phthalate	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dimethyl phthalate	ND	0.92	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dichlorophenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dimethylphenol	ND	0.78	3.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.54	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dinitrophenol	ND	0.41	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dinitrotoluene	ND	0.89	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,6-Dinitrotoluene	ND	1.1	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Fluoranthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Fluorene	ND	1.4	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorobenzene	ND	0.94	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorobutadiene	ND	0.99	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorocyclopentadiene	ND	0.69	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachloroethane	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Indeno(1,2,3-cd)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Isophorone	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1-Methylnaphthalene	ND	0.92	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Methylnaphthalene	ND	0.91	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Methylphenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
N-Nitrosodi-n-propylamine	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
N-Nitrosodiphenylamine	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Naphthalene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Nitroaniline	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
3-Nitroaniline	ND	0.96	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Nitroaniline	ND	0.90	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Nitrobenzene	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Nitrophenol	ND	0.90	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Nitrophenol	ND	0.86	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pentachlorophenol	ND	0.62	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Phenanthrene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Phenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pyrene	ND	1.3	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pyridine	ND	0.84	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,2,4-Trichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4,5-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4,6-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/6/2015 6:43:30 PM	19054
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.000788	0.000395	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Toluene	0.000797	0.000182	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Ethylbenzene	ND	0.000295	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Xylenes, Total	ND	0.00104	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000735	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,4-Trimethylbenzene	ND	0.000458	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3,5-Trimethylbenzene	ND	0.000307	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000469	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000209	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Naphthalene	ND	0.000572	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1-Methylnaphthalene	ND	0.000688	0.00350		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Methylnaphthalene	ND	0.000685	0.00350		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Acetone	0.0184	0.00109	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromobenzene	ND	0.000487	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032

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Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000237	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromoform	ND	0.000454	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromomethane	ND	0.00104	0.00263		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Butanone	0.00234	0.000561	0.00876	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Carbon tetrachloride	ND	0.000317	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chlorobenzene	ND	0.000178	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloroethane	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloroform	ND	0.000361	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloromethane	ND	0.000207	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Chlorotoluene	ND	0.000342	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Carbon disulfide	ND	0.000793	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Chlorotoluene	ND	0.000337	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
cis-1,2-DCE	ND	0.000463	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
cis-1,3-Dichloropropene	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000515	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dibromochloromethane	ND	0.000196	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dibromomethane	ND	0.000994	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichlorobenzene	ND	0.000389	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3-Dichlorobenzene	ND	0.000297	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,4-Dichlorobenzene	ND	0.000275	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dichlorodifluoromethane	ND	0.000715	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloroethane	ND	0.000409	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloroethene	ND	0.000292	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichloropropane	ND	0.000374	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3-Dichloropropane	ND	0.000273	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2,2-Dichloropropane	ND	0.000304	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloropropene	ND	0.000321	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Hexachlorobutadiene	ND	0.000353	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Isopropylbenzene	ND	0.000406	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Isopropyltoluene	ND	0.000680	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Methylene chloride	0.000438	0.000433	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
n-Butylbenzene	ND	0.000719	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Hexanone	ND	0.000364	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
n-Propylbenzene	ND	0.000328	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
sec-Butylbenzene	ND	0.000442	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Styrene	ND	0.000290	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Methyl-2-pentanone	ND	0.000740	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
tert-Butylbenzene	ND	0.000269	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000285	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032

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METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000385	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Tetrachloroethene (PCE)	ND	0.000347	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
trans-1,2-DCE	ND	0.000283	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
trans-1,3-Dichloropropene	ND	0.000229	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,3-Trichlorobenzene	ND	0.000641	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,4-Trichlorobenzene	ND	0.000656	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,1-Trichloroethane	ND	0.000249	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,2-Trichloroethane	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Trichloroethene (TCE)	ND	0.000348	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Trichlorofluoromethane	ND	0.000354	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,3-Trichloropropane	ND	0.000615	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Vinyl chloride	ND	0.000200	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: 4-Bromofluorobenzene	105	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: Toluene-d8	86.8	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.83	3.3		mg/Kg-dr	1	5/6/2015 1:56:09 AM	R25982
Surr: BFB	109	0	67.4-150		%REC	1	5/6/2015 1:56:09 AM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 2:00:00 PM
Lab ID: 1505057-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	300	6.7	12		mg/Kg-dr	1	5/5/2015 8:10:49 PM	19001
Motor Oil Range Organics (MRO)	120	61	61		mg/Kg-dr	1	5/5/2015 8:10:49 PM	19001
Surr: DNOP	107	0	57.9-140		%REC	1	5/5/2015 8:10:49 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0086	0.0033	0.037	J	mg/Kg-dr	1	5/14/2015 3:29:22 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Arsenic	1.1	0.70	5.9	J	mg/Kg-dr	2	5/7/2015 2:25:59 PM	19081
Barium	250	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Beryllium	0.94	0.0088	0.18		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Chromium	14	0.071	0.36		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Cobalt	5.3	0.045	0.36		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 11:27:07 AM	19081
Lead	3.2	0.13	0.30		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Manganese	290	0.070	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Nickel	10	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Silver	ND	0.035	0.30		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Vanadium	19	0.040	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Zinc	32	0.76	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Acenaphthylene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Aniline	ND	0.86	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Anthracene	ND	0.84	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Azobenzene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benz(a)anthracene	ND	0.78	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(a)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(b)fluoranthene	ND	0.94	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(g,h,i)perylene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(k)fluoranthene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzoic acid	ND	0.57	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzyl alcohol	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-chloroethoxy)methane	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 2:00:00 PM
Lab ID: 1505057-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.98	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.76	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-ethylhexyl)phthalate	ND	1.1	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Bromophenyl phenyl ether	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Butyl benzyl phthalate	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Carbazole	ND	0.93	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chloro-3-methylphenol	ND	0.99	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chloroaniline	ND	0.92	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Chloronaphthalene	ND	1.1	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Chlorophenol	ND	0.93	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chlorophenyl phenyl ether	ND	1.5	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Chrysene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Di-n-butyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Di-n-octyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dibenz(a,h)anthracene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dibenzofuran	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,2-Dichlorobenzene	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,3-Dichlorobenzene	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,4-Dichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
3,3´-Dichlorobenzidine	ND	0.76	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Diethyl phthalate	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dimethyl phthalate	ND	0.91	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dichlorophenol	ND	0.99	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dimethylphenol	ND	0.78	3.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.54	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dinitrophenol	ND	0.41	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dinitrotoluene	ND	0.89	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,6-Dinitrotoluene	ND	1.1	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Fluoranthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Fluorene	ND	1.4	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorobenzene	ND	0.94	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorobutadiene	ND	0.98	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorocyclopentadiene	ND	0.69	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachloroethane	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Indeno(1,2,3-cd)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Isophorone	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1-Methylnaphthalene	1.1	0.92	2.0	J	mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Methylnaphthalene	1.0	0.91	2.0	J	mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Methylphenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 2:00:00 PM
Lab ID: 1505057-002
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
N-Nitrosodi-n-propylamine	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
N-Nitrosodiphenylamine	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Naphthalene	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Nitroaniline	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
3-Nitroaniline	ND	0.96	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Nitroaniline	ND	0.89	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Nitrobenzene	ND	1.0	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Nitrophenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Nitrophenol	ND	0.86	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pentachlorophenol	ND	0.62	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Phenanthrene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Phenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pyrene	ND	1.3	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pyridine	ND	0.83	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,2,4-Trichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4,5-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4,6-Trichlorophenol	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/6/2015 7:11:27 PM	19054
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.021	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Toluene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Ethylbenzene	0.040	0.013	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.020	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,4-Trimethylbenzene	0.42	0.0072	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3,5-Trimethylbenzene	0.12	0.0095	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Naphthalene	0.32	0.034	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1-Methylnaphthalene	1.1	0.087	0.58		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Methylnaphthalene	1.5	0.095	0.58		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Acetone	ND	0.11	2.2		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromobenzene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromodichloromethane	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 2:00:00 PM
Lab ID: 1505057-002
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromomethane	ND	0.028	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Butanone	ND	0.093	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Carbon disulfide	ND	0.10	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Carbon tetrachloride	ND	0.014	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chlorobenzene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloroethane	ND	0.11	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloroform	ND	0.015	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloromethane	ND	0.017	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Chlorotoluene	ND	0.016	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Chlorotoluene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
cis-1,2-DCE	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
cis-1,3-Dichloropropene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.025	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dibromochloromethane	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dibromomethane	ND	0.015	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichlorobenzene	ND	0.0087	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3-Dichlorobenzene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,4-Dichlorobenzene	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dichlorodifluoromethane	ND	0.036	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloroethane	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloroethene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichloropropane	ND	0.0081	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3-Dichloropropane	ND	0.020	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2,2-Dichloropropane	ND	0.021	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloropropene	ND	0.022	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Hexachlorobutadiene	ND	0.020	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Hexanone	ND	0.036	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Isopropylbenzene	0.016	0.012	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Isopropyltoluene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Methyl-2-pentanone	ND	0.025	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Methylene chloride	ND	0.058	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
n-Butylbenzene	0.065	0.012	0.43	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
n-Propylbenzene	0.052	0.011	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
sec-Butylbenzene	0.021	0.021	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Styrene	ND	0.027	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
tert-Butylbenzene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 2:00:00 PM
Lab ID: 1505057-002
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.013	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
trans-1,2-DCE	ND	0.0094	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
trans-1,3-Dichloropropene	ND	0.026	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,3-Trichlorobenzene	ND	0.031	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,4-Trichlorobenzene	ND	0.027	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,1-Trichloroethane	ND	0.022	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,2-Trichloroethane	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Trichloroethene (TCE)	ND	0.014	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Trichlorofluoromethane	ND	0.044	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,3-Trichloropropane	ND	0.024	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Vinyl chloride	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Xylenes, Total	0.26	0.040	0.29	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Surr: Dibromofluoromethane	99.8		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: 1,2-Dichloroethane-d4	92.2		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: Toluene-d8	102		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: 4-Bromofluorobenzene	93.4		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	12	3.6	14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Surr: BFB	102	0	67.4-150		%REC	5	5/5/2015 1:55:24 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 2:15:00 PM
Lab ID: 1505057-003 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.2	11		mg/Kg-dr	1	5/5/2015 8:32:10 PM	19001
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/5/2015 8:32:10 PM	19001
Surr: DNOP	97.6	0	57.9-140		%REC	1	5/5/2015 8:32:10 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0059	0.0032	0.037	J	mg/Kg-dr	1	5/14/2015 3:31:10 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Arsenic	2.2	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Barium	360	0.069	0.23		mg/Kg-dr	2	5/7/2015 2:28:50 PM	19081
Beryllium	0.99	0.0086	0.17		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Chromium	14	0.070	0.35		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Cobalt	7.6	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Iron	20000	70	290		mg/Kg-dr	100	5/7/2015 11:28:33 AM	19081
Lead	2.3	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Manganese	860	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:50:50 PM	19081
Nickel	15	0.15	0.58		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Vanadium	49	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Zinc	21	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 2:15:00 PM
Lab ID: 1505057-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
3,3´-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 2:15:00 PM
Lab ID: 1505057-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Surr: 2-Fluorophenol	68.3		26.4-129		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: Phenol-d5	64.7		34.8-118		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 2,4,6-Tribromophenol	62.6		26.8-128		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: Nitrobenzene-d5	63.0		35.8-124		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 2-Fluorobiphenyl	68.8		24.5-139		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 4-Terphenyl-d14	87.6		29.4-129		%REC	1	5/7/2015 2:36:36 PM	19054
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0159	0.000532	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Toluene	0.0115	0.000245	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Ethylbenzene	0.00242	0.000397	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Xylenes, Total	0.00807	0.00141	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000989	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,4-Trimethylbenzene	0.00229	0.000617	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3,5-Trimethylbenzene	0.00151	0.000414	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000632	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000282	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Naphthalene	0.000873	0.000771	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1-Methylnaphthalene	ND	0.000927	0.00472		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Methylnaphthalene	ND	0.000922	0.00472		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Acetone	0.00359	0.00147	0.0118	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromobenzene	ND	0.000656	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 2:15:00 PM
Lab ID: 1505057-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000319	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromoform	ND	0.000611	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromomethane	ND	0.00140	0.00354		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Butanone	ND	0.000756	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Carbon tetrachloride	ND	0.000427	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chlorobenzene	ND	0.000239	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloroethane	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloroform	ND	0.000486	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloromethane	ND	0.000278	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Chlorotoluene	ND	0.000461	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Carbon disulfide	ND	0.00107	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Chlorotoluene	ND	0.000455	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
cis-1,2-DCE	ND	0.000624	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
cis-1,3-Dichloropropene	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000693	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dibromochloromethane	ND	0.000265	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dibromomethane	ND	0.00134	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichlorobenzene	ND	0.000524	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3-Dichlorobenzene	ND	0.000400	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,4-Dichlorobenzene	ND	0.000370	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dichlorodifluoromethane	ND	0.000963	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloroethane	ND	0.000551	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloroethene	ND	0.000394	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichloropropane	ND	0.000504	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3-Dichloropropane	ND	0.000368	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2,2-Dichloropropane	ND	0.000410	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloropropene	ND	0.000432	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Hexachlorobutadiene	ND	0.000476	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Isopropylbenzene	ND	0.000547	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Isopropyltoluene	ND	0.000916	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Methylene chloride	ND	0.000583	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
n-Butylbenzene	ND	0.000969	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Hexanone	ND	0.000491	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
n-Propylbenzene	ND	0.000442	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
sec-Butylbenzene	0.000849	0.000596	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Styrene	ND	0.000391	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Methyl-2-pentanone	ND	0.000996	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
tert-Butylbenzene	ND	0.000362	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000384	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 2:15:00 PM
Lab ID: 1505057-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000519	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Tetrachloroethene (PCE)	ND	0.000468	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
trans-1,2-DCE	ND	0.000381	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
trans-1,3-Dichloropropene	ND	0.000309	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,3-Trichlorobenzene	ND	0.000863	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,4-Trichlorobenzene	ND	0.000884	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,1-Trichloroethane	ND	0.000336	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,2-Trichloroethane	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Trichloroethene (TCE)	ND	0.000469	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Trichlorofluoromethane	ND	0.000477	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,3-Trichloropropane	ND	0.000829	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Vinyl chloride	ND	0.000269	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Surr: 1,2-Dichloroethane-d4	92.8	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: Dibromofluoromethane	97.3	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: Toluene-d8	97.1	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.91	3.6		mg/Kg-dr	1	5/6/2015 2:25:01 AM	R25982
Surr: BFB	104	0	67.4-150		%REC	1	5/6/2015 2:25:01 AM	R25982

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9DUP02
Project: SWMU 10
Collection Date: 4/30/2015
Lab ID: 1505057-004
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	530	6.6	12		mg/Kg-dr	1	5/5/2015 8:53:40 PM	19001
Motor Oil Range Organics (MRO)	170	60	60		mg/Kg-dr	1	5/5/2015 8:53:40 PM	19001
Surr: DNOP	108	0	57.9-140		%REC	1	5/5/2015 8:53:40 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0043	0.0035	0.039	J	mg/Kg-dr	1	5/14/2015 3:32:58 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Arsenic	1.3	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Barium	190	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Beryllium	0.90	0.0087	0.18		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Chromium	8.5	0.071	0.35		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Cobalt	4.1	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Iron	13000	71	290		mg/Kg-dr	100	5/7/2015 11:29:56 AM	19081
Lead	3.3	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Manganese	170	0.069	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Nickel	7.4	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Zinc	49	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benz(a)anthracene	ND	0.092	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9DUP02
Project: SWMU 10
Collection Date: 4/30/2015
Lab ID: 1505057-004
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
3,3´-Dichlorobenzidine	ND	0.091	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1-Methylnaphthalene	0.70	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Methylnaphthalene	0.89	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9DUP02
Project: SWMU 10
Collection Date: 4/30/2015
Lab ID: 1505057-004
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Naphthalene	0.33	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Surr: 2-Fluorophenol	73.5		26.4-129		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: Phenol-d5	68.2		34.8-118		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 2,4,6-Tribromophenol	77.9		26.8-128		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: Nitrobenzene-d5	69.8		35.8-124		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 2-Fluorobiphenyl	71.3		24.5-139		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 4-Terphenyl-d14	54.8		29.4-129		%REC	1	5/11/2015 12:54:59 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.049	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Toluene	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Ethylbenzene	0.34	0.030	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.046	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,4-Trimethylbenzene	2.8	0.016	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3,5-Trimethylbenzene	0.82	0.022	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichloroethane (EDC)	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dibromoethane (EDB)	ND	0.026	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Naphthalene	2.5	0.078	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1-Methylnaphthalene	9.3	0.20	1.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Methylnaphthalene	13	0.22	1.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Acetone	ND	0.24	4.9		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromobenzene	ND	0.024	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromodichloromethane	ND	0.027	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9DUP02
Project: SWMU 10
Collection Date: 4/30/2015
Lab ID: 1505057-004
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.026	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromomethane	ND	0.063	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Butanone	ND	0.21	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Carbon disulfide	ND	0.24	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Carbon tetrachloride	ND	0.032	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chlorobenzene	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloroethane	ND	0.25	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloroform	ND	0.034	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloromethane	ND	0.038	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Chlorotoluene	ND	0.037	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Chlorotoluene	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
cis-1,2-DCE	ND	0.041	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
cis-1,3-Dichloropropene	ND	0.023	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.056	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dibromochloromethane	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dibromomethane	ND	0.034	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichlorobenzene	ND	0.020	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3-Dichlorobenzene	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,4-Dichlorobenzene	ND	0.041	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dichlorodifluoromethane	ND	0.082	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloroethane	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloroethene	ND	0.023	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichloropropane	ND	0.018	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3-Dichloropropane	ND	0.045	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2,2-Dichloropropane	ND	0.048	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloropropene	ND	0.049	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Hexachlorobutadiene	ND	0.045	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Hexanone	ND	0.081	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Isopropylbenzene	0.16	0.028	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Isopropyltoluene	0.21	0.023	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Methyl-2-pentanone	ND	0.057	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Methylene chloride	ND	0.13	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
n-Butylbenzene	0.40	0.028	0.98	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
n-Propylbenzene	0.34	0.024	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
sec-Butylbenzene	0.17	0.047	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Styrene	ND	0.060	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
tert-Butylbenzene	ND	0.037	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.027	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.040	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9DUP02
Project: SWMU 10
Collection Date: 4/30/2015
Lab ID: 1505057-004
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.028	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
trans-1,2-DCE	ND	0.021	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
trans-1,3-Dichloropropene	ND	0.059	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,3-Trichlorobenzene	ND	0.070	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,4-Trichlorobenzene	ND	0.060	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,1-Trichloroethane	ND	0.050	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,2-Trichloroethane	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Trichloroethene (TCE)	ND	0.032	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Trichlorofluoromethane	ND	0.099	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,3-Trichloropropane	ND	0.055	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Vinyl chloride	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Xylenes, Total	1.9	0.091	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Surr: Dibromofluoromethane	94.7		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: 1,2-Dichloroethane-d4	86.7		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: Toluene-d8	98.9		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: 4-Bromofluorobenzene	74.8		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	69	8.2	33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	R25941
Surr: BFB	96.8	0	67.4-150		%REC	10	5/5/2015 5:18:50 AM	R25941

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 10:10:00 AM
Lab ID: 1505057-005 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	9700	61	110		mg/Kg-dr	10	5/5/2015 9:36:30 PM	19001
Motor Oil Range Organics (MRO)	2000	550	550		mg/Kg-dr	10	5/5/2015 9:36:30 PM	19001
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/5/2015 9:36:30 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.015	0.0033	0.038	J	mg/Kg-dr	1	5/14/2015 3:34:46 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Arsenic	1.5	0.32	2.7	J	mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Barium	830	0.16	0.55		mg/Kg-dr	5	5/8/2015 2:52:27 PM	19081
Beryllium	0.65	0.0081	0.16		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Chromium	29	0.066	0.33		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Cobalt	3.9	0.042	0.33		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Iron	14000	66	270		mg/Kg-dr	100	5/7/2015 11:31:18 AM	19081
Lead	4.5	0.12	0.27		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Manganese	380	0.13	0.22		mg/Kg-dr	2	5/7/2015 2:40:16 PM	19081
Nickel	6.9	0.14	0.55		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Vanadium	22	0.037	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Zinc	17	0.71	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benz(a)anthracene	ND	0.89	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 10:10:00 AM
Lab ID: 1505057-005 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
3,3´-Dichlorobenzidine	ND	0.88	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dimethyl phthalate	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dimethylphenol	ND	0.89	3.4		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Fluorene	8.1	1.5	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1-Methylnaphthalene	68	4.2	9.1		mg/Kg-dr	4	5/11/2015 3:27:10 PM	19087
2-Methylnaphthalene	89	4.2	9.1		mg/Kg-dr	4	5/11/2015 3:27:10 PM	19087
2-Methylphenol	ND	1.1	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 10:10:00 AM
Lab ID: 1505057-005 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Naphthalene	18	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Nitrophenol	ND	0.98	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Phenanthrene	15	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Phenol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pyridine	ND	0.96	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/11/2015 2:18:55 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.20	0.097	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Toluene	0.48	0.078	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Ethylbenzene	1.4	0.060	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.092	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,4-Trimethylbenzene	9.7	0.033	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3,5-Trimethylbenzene	4.7	0.043	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichloroethane (EDC)	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dibromoethane (EDB)	ND	0.052	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Naphthalene	7.8	0.16	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1-Methylnaphthalene	27	0.39	2.6		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Methylnaphthalene	41	0.43	2.6		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Acetone	ND	0.49	9.8		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromobenzene	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromodichloromethane	ND	0.053	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 10:10:00 AM
Lab ID: 1505057-005
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.053	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromomethane	ND	0.13	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Butanone	ND	0.42	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Carbon disulfide	ND	0.47	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Carbon tetrachloride	ND	0.064	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chlorobenzene	ND	0.050	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloroethane	ND	0.51	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloroform	ND	0.068	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloromethane	ND	0.076	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Chlorotoluene	ND	0.074	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Chlorotoluene	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
cis-1,2-DCE	ND	0.083	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
cis-1,3-Dichloropropene	ND	0.045	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dibromochloromethane	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dibromomethane	ND	0.069	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichlorobenzene	ND	0.039	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3-Dichlorobenzene	ND	0.077	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,4-Dichlorobenzene	ND	0.081	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dichlorodifluoromethane	ND	0.16	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloroethane	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloroethene	ND	0.045	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichloropropane	ND	0.037	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3-Dichloropropane	ND	0.090	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2,2-Dichloropropane	ND	0.095	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloropropene	ND	0.097	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Hexachlorobutadiene	ND	0.091	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Hexanone	ND	0.16	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Isopropylbenzene	0.52	0.055	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Isopropyltoluene	0.95	0.046	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Methyl-2-pentanone	ND	0.11	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Methylene chloride	ND	0.26	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
n-Butylbenzene	1.2	0.056	2.0	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
n-Propylbenzene	0.85	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
sec-Butylbenzene	0.51	0.093	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Styrene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
tert-Butylbenzene	ND	0.075	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.054	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.079	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 10:10:00 AM
Lab ID: 1505057-005 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.057	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
trans-1,2-DCE	ND	0.042	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
trans-1,3-Dichloropropene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,4-Trichlorobenzene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,1-Trichloroethane	ND	0.099	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,2-Trichloroethane	ND	0.079	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Trichloroethene (TCE)	ND	0.064	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Trichlorofluoromethane	ND	0.20	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Vinyl chloride	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Xylenes, Total	13	0.18	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Surr: Dibromofluoromethane	99.4		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: 1,2-Dichloroethane-d4	96.4		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: Toluene-d8	102		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: 4-Bromofluorobenzene	74.9		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	670	16	65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	R25941
Surr: BFB	105	0	67.4-150		%REC	20	5/5/2015 5:47:35 AM	R25941

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 10:20:00 AM
Lab ID: 1505057-006
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	25	6.2	11		mg/Kg-dr	1	5/5/2015 10:19:18 PM	19001
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/5/2015 10:19:18 PM	19001
Surr: DNOP	108	0	57.9-140		%REC	1	5/5/2015 10:19:18 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.041	0.0032	0.036		mg/Kg-dr	1	5/14/2015 3:36:34 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Arsenic	1.9	0.33	2.8	J	mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Barium	130	0.034	0.11		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Beryllium	0.83	0.0084	0.17		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Chromium	11	0.068	0.34		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Cobalt	4.5	0.043	0.34		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Iron	13000	68	280		mg/Kg-dr	100	5/7/2015 11:32:40 AM	19081
Lead	3.4	0.12	0.28		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Manganese	370	0.13	0.23		mg/Kg-dr	2	5/7/2015 2:43:12 PM	19081
Nickel	7.8	0.15	0.57		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Vanadium	17	0.038	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Zinc	18	0.73	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 10:20:00 AM
Lab ID: 1505057-006
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
3,3´-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1-Methylnaphthalene	0.26	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Methylnaphthalene	0.35	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 10:20:00 AM
Lab ID: 1505057-006
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Naphthalene	0.15	0.11	0.23	J	mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Surr: 2-Fluorophenol	47.2		26.4-129		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: Phenol-d5	45.1		34.8-118		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 2,4,6-Tribromophenol	56.2		26.8-128		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: Nitrobenzene-d5	47.4		35.8-124		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 2-Fluorobiphenyl	51.0		24.5-139		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 4-Terphenyl-d14	40.0		29.4-129		%REC	1	5/11/2015 2:46:44 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.047	0.0047	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Toluene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Ethylbenzene	0.044	0.0029	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,4-Trimethylbenzene	0.021	0.0016	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3,5-Trimethylbenzene	0.0048	0.0021	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Naphthalene	0.14	0.0075	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1-Methylnaphthalene	0.37	0.019	0.13		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Methylnaphthalene	0.30	0.021	0.13		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Acetone	ND	0.023	0.47		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromobenzene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromodichloromethane	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 10:20:00 AM
Lab ID: 1505057-006
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromomethane	ND	0.0061	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Butanone	ND	0.020	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Carbon disulfide	ND	0.023	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Carbon tetrachloride	ND	0.0031	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chlorobenzene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloroethane	ND	0.024	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloroform	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloromethane	ND	0.0036	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Chlorotoluene	ND	0.0035	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Chlorotoluene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
cis-1,2-DCE	ND	0.0040	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
cis-1,3-Dichloropropene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.0054	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dibromochloromethane	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dibromomethane	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichlorobenzene	ND	0.0019	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3-Dichlorobenzene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,4-Dichlorobenzene	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dichlorodifluoromethane	ND	0.0079	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloroethane	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloroethene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichloropropane	ND	0.0018	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3-Dichloropropane	ND	0.0043	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2,2-Dichloropropane	ND	0.0046	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloropropene	ND	0.0047	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Hexachlorobutadiene	ND	0.0044	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Hexanone	ND	0.0077	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Isopropylbenzene	0.012	0.0026	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Isopropyltoluene	0.014	0.0022	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Methyl-2-pentanone	ND	0.0054	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Methylene chloride	ND	0.013	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
n-Butylbenzene	0.023	0.0027	0.094	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
n-Propylbenzene	0.026	0.0023	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
sec-Butylbenzene	0.011	0.0045	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Styrene	ND	0.0058	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
tert-Butylbenzene	ND	0.0036	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 10:20:00 AM
Lab ID: 1505057-006
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0027	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
trans-1,2-DCE	ND	0.0020	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
trans-1,3-Dichloropropene	ND	0.0056	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,3-Trichlorobenzene	ND	0.0067	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,4-Trichlorobenzene	ND	0.0058	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,1-Trichloroethane	ND	0.0048	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,2-Trichloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Trichloroethene (TCE)	ND	0.0031	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Trichlorofluoromethane	ND	0.0095	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,3-Trichloropropane	ND	0.0053	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Vinyl chloride	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Xylenes, Total	0.016	0.0087	0.063	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Surr: Dibromofluoromethane	98.4		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: 1,2-Dichloroethane-d4	91.2		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: Toluene-d8	93.5		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: 4-Bromofluorobenzene	89.3		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	10	0.79	3.1		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Surr: BFB	113	0	67.4-150		%REC	1	5/5/2015 2:53:06 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 10:35:00 AM
Lab ID: 1505057-007
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.3	11		mg/Kg-dr	1	5/5/2015 10:40:37 PM	19001
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/5/2015 10:40:37 PM	19001
Surr: DNOP	99.4	0	57.9-140		%REC	1	5/5/2015 10:40:37 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0037	0.0034	0.039	J	mg/Kg-dr	1	5/14/2015 3:42:07 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Arsenic	2.0	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Barium	470	0.068	0.23		mg/Kg-dr	2	5/7/2015 2:46:11 PM	19081
Beryllium	0.99	0.0085	0.17		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Chromium	20	0.069	0.34		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Cobalt	8.7	0.043	0.34		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Iron	17000	69	290		mg/Kg-dr	100	5/7/2015 11:34:04 AM	19081
Lead	0.27	0.12	0.29	J	mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Manganese	1200	0.34	0.57		mg/Kg-dr	5	5/8/2015 2:54:10 PM	19081
Nickel	16	0.15	0.57		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Vanadium	15	0.038	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Zinc	24	0.74	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 10:35:00 AM
Lab ID: 1505057-007
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
3,3´-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 10:35:00 AM
Lab ID: 1505057-007
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Surr: 2-Fluorophenol	57.6		26.4-129		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: Phenol-d5	59.6		34.8-118		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 2,4,6-Tribromophenol	69.7		26.8-128		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: Nitrobenzene-d5	57.5		35.8-124		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 2-Fluorobiphenyl	70.0		24.5-139		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 4-Terphenyl-d14	54.8		29.4-129		%REC	1	5/13/2015 2:38:36 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0178	0.000429	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Toluene	0.0122	0.000198	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Ethylbenzene	0.00285	0.000320	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Xylenes, Total	0.00872	0.00114	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000798	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,4-Trimethylbenzene	0.00236	0.000497	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3,5-Trimethylbenzene	0.00159	0.000334	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000510	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000228	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Naphthalene	0.000809	0.000622	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1-Methylnaphthalene	ND	0.000747	0.00381		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Methylnaphthalene	ND	0.000744	0.00381		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Acetone	0.00466	0.00119	0.00952	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromobenzene	ND	0.000530	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 10:35:00 AM
Lab ID: 1505057-007
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000257	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromoform	ND	0.000493	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromomethane	ND	0.00113	0.00285		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Butanone	ND	0.000609	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Carbon tetrachloride	ND	0.000344	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chlorobenzene	ND	0.000193	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloroethane	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloroform	ND	0.000392	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloromethane	ND	0.000224	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Chlorotoluene	ND	0.000371	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Carbon disulfide	ND	0.000861	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Chlorotoluene	ND	0.000367	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
cis-1,2-DCE	ND	0.000503	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
cis-1,3-Dichloropropene	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000559	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dibromochloromethane	ND	0.000213	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dibromomethane	ND	0.00108	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichlorobenzene	ND	0.000422	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3-Dichlorobenzene	ND	0.000323	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,4-Dichlorobenzene	ND	0.000299	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dichlorodifluoromethane	ND	0.000777	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloroethane	ND	0.000445	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloroethene	ND	0.000318	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichloropropane	ND	0.000407	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3-Dichloropropane	ND	0.000296	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2,2-Dichloropropane	ND	0.000331	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloropropene	ND	0.000349	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Hexachlorobutadiene	ND	0.000384	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Isopropylbenzene	0.000447	0.000442	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Isopropyltoluene	ND	0.000739	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Methylene chloride	ND	0.000470	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
n-Butylbenzene	ND	0.000781	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Hexanone	ND	0.000396	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
n-Propylbenzene	0.000428	0.000356	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
sec-Butylbenzene	0.000714	0.000481	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Styrene	ND	0.000315	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Methyl-2-pentanone	ND	0.000804	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
tert-Butylbenzene	ND	0.000292	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000310	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-8 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 10:35:00 AM
Lab ID: 1505057-007
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000418	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Tetrachloroethene (PCE)	ND	0.000377	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
trans-1,2-DCE	ND	0.000308	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
trans-1,3-Dichloropropene	ND	0.000249	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,3-Trichlorobenzene	ND	0.000696	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,4-Trichlorobenzene	ND	0.000713	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,1-Trichloroethane	ND	0.000271	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,2-Trichloroethane	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Trichloroethene (TCE)	ND	0.000378	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Trichlorofluoromethane	ND	0.000385	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,3-Trichloropropane	ND	0.000668	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Vinyl chloride	ND	0.000217	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Surr: 1,2-Dichloroethane-d4	93.4	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: 4-Bromofluorobenzene	95.8	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: Dibromofluoromethane	99.8	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: Toluene-d8	84.7	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.88	3.5		mg/Kg-dr	1	5/6/2015 2:53:53 AM	R25982
Surr: BFB	105	0	67.4-150		%REC	1	5/6/2015 2:53:53 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-001C SWMU 10-9 2-4 FT

Project # :

Collected By :
Collection Date : 04/30/15 13:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	7.7	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-01 (PH) - 7.7 at 20.5C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-002C SWMU 10-09 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	110		mV	2580 B-2011	05/10/15	1
pH	7.8	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-02 (PH) - 7.8 at 21.0C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-003C SWMU 10-9 18-20 FT

Project # :

Collected By :
Collection Date : 04/30/15 14:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	100		mV	2580 B-2011	05/10/15	1
pH	8.5	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-03 (PH) - 8.5 at 21.0C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-04

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-004C SWMU 10-9 DUP02

Project # :

Collected By :
Collection Date : 04/30/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	110		mV	2580 B-2011	05/10/15	1
pH	7.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-04 (PH) - 7.6 at 21.5c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-05

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-005C SWMU 10-8 2-4 FT

Project # :

Collected By :
Collection Date : 04/30/15 10:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	100		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-05 (PH) - 8.3 at 21.2c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-06

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-006C SWMU 10-8 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	7.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-06 (PH) - 7.7 at 20.8c

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Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-07

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-007C SWMU 10-8 18-20 FT

Project # :

Collected By :
Collection Date : 04/30/15 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	190		mV	2580 B-2011	05/10/15	1
pH	8.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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L762972-07 (PH) - 8.7 at 20.3c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762972

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG786845	05/07/15 05:34
Chromium,Hexavalent	< 2	mg/kg			WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762970-04	WG786845
pH	su	7.80	7.80	0.385	1	L762507-04	WG787133
pH	su	8.00	8.10	1.12*	1	L763345-03	WG787133
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	59.8	65.2	109.	80-120	WG786845
pH	su	7.84	7.82	99.7	98.3-101.7	WG787133
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium,Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/kg	65.8	65.2	110.	80-120	0.916	20	WG786845
pH	su	7.81	7.82	100.	98.3-101.7	0.128	20	WG787133

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762972

May 13, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium, Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	20.8	0.0	20	100.	75-125	L762970-04	WG786845
Chromium, Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	20.8	20.8	104.	75-125	0.0	20	L762970-04	WG786845
Chromium, Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134

Batch number /Run number / Sample number cross reference

WG786845: R3035419: L762972-01 02 03 04 05
WG787133: R3035650: L762972-01 02 03
WG787168: R3035796: L762972-04 05 06 07
WG787134: R3035910: L762972-06 07
WG787860: R3036066: L762972-01 02 03 04 05 06 07
WG787733: R3036388: L762972-01 02 03 04 05 06 07

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19001**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**PBS**	Batch ID:	**19001**	RunNo:	**25956**
Prep Date:	**5/1/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769479** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		116	57.9	140			

Sample ID	**LCS-19001**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**LCSS**	Batch ID:	**19001**	RunNo:	**25956**
Prep Date:	**5/1/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769591** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	67.8	130			
Surr: DNOP	6.3		5.000		127	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19054**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19054**	RunNo: **26018**
Prep Date: **5/5/2015**	Analysis Date: **5/6/2015**	SeqNo: **771331** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19054**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19054**	RunNo: **26018**
Prep Date: **5/5/2015**	Analysis Date: **5/6/2015**	SeqNo: **771331** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		58.4	26.4	129			
Surr: Phenol-d5	2.2		3.330		65.5	34.8	118			
Surr: 2,4,6-Tribromophenol	2.3		3.330		70.3	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.670		65.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.1		1.670		67.9	24.5	139			
Surr: 4-Terphenyl-d14	1.8		1.670		108	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19054**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19054**	RunNo: **26018**
Prep Date: **5/5/2015**	Analysis Date: **5/6/2015**	SeqNo: **771332** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.2	45.8	114			
4-Chloro-3-methylphenol	2.4	0.50	3.330	0	72.5	52.3	122			
2-Chlorophenol	2.1	0.20	3.330	0	61.9	49.9	115			
1,4-Dichlorobenzene	1.0	0.20	1.670	0	62.1	43.7	107			
2,4-Dinitrotoluene	0.91	0.50	1.670	0	54.7	36	106			
N-Nitrosodi-n-propylamine	1.1	0.20	1.670	0	66.8	39.5	110			
4-Nitrophenol	2.2	0.25	3.330	0	64.7	45.1	121			
Pentachlorophenol	1.9	0.40	3.330	0	57.2	23.7	111			
Phenol	2.2	0.20	3.330	0	66.1	52.7	119			
Pyrene	1.0	0.20	1.670	0	61.3	50.4	116			
1,2,4-Trichlorobenzene	1.2	0.20	1.670	0	72.1	40.1	114			
Surr: 2-Fluorophenol	1.8		3.330		55.1	26.4	129			
Surr: Phenol-d5	2.1		3.330		63.9	34.8	118			
Surr: 2,4,6-Tribromophenol	1.9		3.330		58.5	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.670		62.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.0		1.670		61.8	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		75.1	29.4	129			

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Sample ID **MB-19087**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774670** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19087**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774670** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.8		3.330		85.4	26.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19087**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774670** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	2.8		3.330		84.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		86.3	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		90.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		98.8	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.6	29.4	129			

Sample ID **lcs-19087**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	72.6	45.8	114			
4-Chloro-3-methylphenol	2.5	0.50	3.330	0	74.7	52.3	122			
2-Chlorophenol	2.4	0.20	3.330	0	70.8	49.9	115			
1,4-Dichlorobenzene	1.2	0.20	1.670	0	71.5	43.7	107			
2,4-Dinitrotoluene	1.0	0.50	1.670	0	60.6	36	106			
N-Nitrosodi-n-propylamine	1.2	0.20	1.670	0	73.6	39.5	110			
4-Nitrophenol	2.5	0.25	3.330	0	75.7	45.1	121			
Pentachlorophenol	2.3	0.40	3.330	0	69.3	23.7	111			
Phenol	2.5	0.20	3.330	0	74.1	52.7	119			
Pyrene	1.1	0.20	1.670	0	68.6	50.4	116			
1,2,4-Trichlorobenzene	1.5	0.20	1.670	0	87.6	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		76.8	26.4	129			
Surr: Phenol-d5	2.6		3.330		78.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		82.5	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		87.0	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.6	24.5	139			
Surr: 4-Terphenyl-d14	1.0		1.670		61.0	29.4	129			

Sample ID **1505057-004Bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-9DUP02**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774677** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.7	0.24	1.964	0	84.2	36.3	121			
4-Chloro-3-methylphenol	3.1	0.59	3.916	0	78.1	48.2	119			
2-Chlorophenol	2.9	0.24	3.916	0	75.3	37.2	114			
1,4-Dichlorobenzene	1.6	0.24	1.964	0	81.7	28.8	106			
2,4-Dinitrotoluene	2.0	0.59	1.964	0	100	34.6	111			
N-Nitrosodi-n-propylamine	2.0	0.24	1.964	0	101	32.7	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505057-004Bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-9DUP02**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774677** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	3.7	0.29	3.916	0	94.7	30.1	134			
Pentachlorophenol	2.6	0.47	3.916	0	66.9	24	120			
Phenol	3.1	0.24	3.916	0	80.2	38.3	118			
Pyrene	1.7	0.24	1.964	0	84.7	38.3	134			
1,2,4-Trichlorobenzene	1.7	0.24	1.964	0	84.2	31.8	110			
Surr: 2-Fluorophenol	3.2		3.916		82.5	26.4	129			
Surr: Phenol-d5	3.2		3.916		81.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.6		3.916		66.5	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.964		80.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.964		76.1	24.5	139			
Surr: 4-Terphenyl-d14	1.2		1.964		62.9	29.4	129			

Sample ID **1505057-004Bmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-9DUP02**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774678** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.0	0.24	1.971	0	100	36.3	121	18.0	25.4	
4-Chloro-3-methylphenol	2.9	0.59	3.930	0	72.7	48.2	119	6.77	30.4	
2-Chlorophenol	2.8	0.24	3.930	0	72.1	37.2	114	3.91	33.4	
1,4-Dichlorobenzene	1.5	0.24	1.971	0	75.4	28.8	106	7.67	20.9	
2,4-Dinitrotoluene	2.1	0.59	1.971	0	105	34.6	111	5.69	27.9	
N-Nitrosodi-n-propylamine	1.8	0.24	1.971	0	93.0	32.7	117	7.78	27.5	
4-Nitrophenol	3.3	0.30	3.930	0	84.3	30.1	134	11.3	33.7	
Pentachlorophenol	2.2	0.47	3.930	0	55.5	24	120	18.2	39.7	
Phenol	2.9	0.24	3.930	0	72.9	38.3	118	9.17	30.1	
Pyrene	1.7	0.24	1.971	0	85.5	38.3	134	1.33	22.7	
1,2,4-Trichlorobenzene	1.5	0.24	1.971	0	76.8	31.8	110	8.76	27.8	
Surr: 2-Fluorophenol	3.0		3.930		76.0	26.4	129	0	0	
Surr: Phenol-d5	3.0		3.930		75.1	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.0		3.930		51.5	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.6		1.971		80.7	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.4		1.971		69.9	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.2		1.971		60.4	29.4	129	0	0	

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19157**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Sample ID **1505057-007Bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-8 (18-20')**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776631** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.23	1.925	0	57.3	36.3	121			
4-Chloro-3-methylphenol	2.3	0.58	3.839	0	58.6	48.2	119			
2-Chlorophenol	1.9	0.23	3.839	0	49.6	37.2	114			
1,4-Dichlorobenzene	1.0	0.23	1.925	0	52.9	28.8	106			
2,4-Dinitrotoluene	0.94	0.58	1.925	0	48.6	34.6	111			
N-Nitrosodi-n-propylamine	1.1	0.23	1.925	0	57.5	32.7	117			
4-Nitrophenol	2.3	0.29	3.839	0	59.6	30.1	134			
Pentachlorophenol	2.2	0.46	3.839	0.1505	52.7	24	120			
Phenol	2.1	0.23	3.839	0	55.1	38.3	118			
Pyrene	0.96	0.23	1.925	0	50.0	38.3	134			
1,2,4-Trichlorobenzene	1.1	0.23	1.925	0	58.0	31.8	110			
Surr: 2-Fluorophenol	2.2		3.839		56.5	26.4	129			
Surr: Phenol-d5	2.2		3.839		58.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.839		65.9	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.925		57.0	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.925		63.4	24.5	139			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505057-007Bms**	SampType:	**MS**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**SWMU 10-8 (18-20')**	Batch ID:	**19157**	RunNo:	**26173**
Prep Date:	**5/11/2015**	Analysis Date:	**5/13/2015**	SeqNo:	**776631** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.1		1.925		55.2	29.4	129			

Sample ID	**1505057-007Bmsd**	SampType:	**MSD**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**SWMU 10-8 (18-20')**	Batch ID:	**19157**	RunNo:	**26173**
Prep Date:	**5/11/2015**	Analysis Date:	**5/13/2015**	SeqNo:	**776632** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.23	1.936	0	58.5	36.3	121	2.67	25.4	
4-Chloro-3-methylphenol	2.4	0.58	3.860	0	61.0	48.2	119	4.55	30.4	
2-Chlorophenol	1.9	0.23	3.860	0	50.1	37.2	114	1.64	33.4	
1,4-Dichlorobenzene	1.0	0.23	1.936	0	53.4	28.8	106	1.47	20.9	
2,4-Dinitrotoluene	0.96	0.58	1.936	0	49.6	34.6	111	2.52	27.9	
N-Nitrosodi-n-propylamine	1.1	0.23	1.936	0	59.2	32.7	117	3.34	27.5	
4-Nitrophenol	2.4	0.29	3.860	0	62.6	30.1	134	5.42	33.7	
Pentachlorophenol	2.2	0.46	3.860	0.1505	53.7	24	120	2.23	39.7	
Phenol	2.1	0.23	3.860	0	55.5	38.3	118	1.36	30.1	
Pyrene	0.99	0.23	1.936	0	51.3	38.3	134	3.13	22.7	
1,2,4-Trichlorobenzene	1.2	0.23	1.936	0	61.5	31.8	110	6.24	27.8	
Surr: 2-Fluorophenol	2.1		3.860		55.5	26.4	129	0	0	
Surr: Phenol-d5	2.3		3.860		60.6	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.6		3.860		66.4	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.1		1.936		56.1	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.2		1.936		62.6	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.1		1.936		55.7	29.4	129	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19227**	SampType: **MBLK**			TestCode: **EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID: **19227**			RunNo: **26201**					
Prep Date:	**5/14/2015**	Analysis Date: **5/14/2015**			SeqNo: **777418**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19227**	SampType: **LCS**			TestCode: **EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID: **19227**			RunNo: **26201**					
Prep Date:	**5/14/2015**	Analysis Date: **5/14/2015**			SeqNo: **777419**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	100	80	120			

Sample ID	**MB-19445**	SampType: **MBLK**			TestCode: **EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID: **19445**			RunNo: **26497**					
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787358**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19445**	SampType: **LCS**			TestCode: **EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID: **19445**			RunNo: **26497**					
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787359**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.7	80	120			

Sample ID	**1505057-001BMS**	SampType: **MS**			TestCode: **EPA Method 7471: Mercury**					
Client ID:	**SWMU 10-9 (2-4')**	Batch ID: **19445**			RunNo: **26497**					
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787390**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.34	0.21	0.2110	0.07022	127	75	125			S

Sample ID	**1505057-001BMSD**	SampType: **MSD**			TestCode: **EPA Method 7471: Mercury**					
Client ID:	**SWMU 10-9 (2-4')**	Batch ID: **19445**			RunNo: **26497**					
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787391**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.41	0.20	0.1970	0.07022	172	75	125	19.2	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-19081**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19081**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772230** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID **MB-19081**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19081**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772232** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**R25941**	RunNo:	**25941**				
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**770909**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**R25941**	RunNo:	**25941**				
Prep Date:		Analysis Date:	**5/4/2015**	SeqNo:	**770910**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**R25982**	RunNo:	**25982**				
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771006**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**R25982**	RunNo:	**25982**				
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771007**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505057** RcptNo: 1

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:50:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 10:01:27 AM**

Reviewed By: AG 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505057	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.01.15	1350	SOIL	SWMU 10-9 (2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH	-001										✓					
				VIALS-2	SOB1	-001										✓					
	1400	SOIL	SWMU 10-9 (4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH	-002										✓					
				VIALS-2	SOB1	-002										✓					
	1415	SOIL	SWMU 10-9 (18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH	-003										✓					
				VIALS-2	SOB1	-003										✓					
	—	SOIL	SWMU 10-9 DUP02	JARS-2	NEAT	-004			✓							✓	✓	✓			
				~~JARS~~ VIALS-2	MeOH	-004										✓					
				VIALS-2	SOB1	-004										✓					

Date	Time	Relinquished by:	Received by:	Date	Time
5.1.15	0730			5/1/15	11:37
5/1/15	1350			05/01/15	1350

Remarks:

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505057	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.30.15	1010	SOIL	SWMU 10-8(2-4')	JARS-2	NEAT	-005			✓							✓	✓	✓			
				VIALS-2	MeOH	-005										✓					
				VIALS-2	SOB1	-005										✓					
	1020	SOIL	SWMU 10-8(4-6')	JARS-2	NEAT	-006			✓							✓	✓	✓			
				VIALS-2	MeOH	-006										✓					
				VIALS-2	SOB1	-006										✓					
	1035	SOIL	SWMU 10-8(18-20')	JARS-2	NEAT	-007			✓							✓	✓	✓			
				VIALS-2	MeOH	-007										✓					
				VIALS-2	SOB1	-007										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.1.15	0730			5-1-15	11:37
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-1-15	13:50			05/01/15	1552

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505058

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 14, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505058**
Date: **10/12/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 3:30:00 PM
Lab ID: 1505058-001 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	59	5.5	9.9		mg/Kg-dr	1	5/5/2015 10:54:12 PM	19040
Motor Oil Range Organics (MRO)	98	50	50		mg/Kg-dr	1	5/5/2015 10:54:12 PM	19040
Surr: DNOP	119	0	57.9-140		%REC	1	5/5/2015 10:54:12 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.044	0.0032	0.036		mg/Kg-dr	1	5/14/2015 3:43:58 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Arsenic	2.4	0.32	2.7	J	mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Barium	450	0.065	0.22		mg/Kg-dr	2	5/7/2015 2:49:05 PM	19081
Beryllium	0.28	0.0081	0.16		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Chromium	13	0.066	0.33		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Cobalt	3.1	0.042	0.33		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Iron	9200	66	270		mg/Kg-dr	100	5/7/2015 11:35:25 AM	19081
Lead	4.1	0.12	0.27		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Manganese	94	0.064	0.11		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Nickel	4.4	0.14	0.55		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Vanadium	21	0.037	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Zinc	15	0.71	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Acenaphthylene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Aniline	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Anthracene	ND	0.19	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Azobenzene	ND	0.25	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benz(a)anthracene	ND	0.18	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(a)pyrene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(b)fluoranthene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(g,h,i)perylene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(k)fluoranthene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzoic acid	ND	0.13	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzyl alcohol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-chloroethoxy)methane	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 3:30:00 PM
Lab ID: 1505058-001 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.17	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.26	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Bromophenyl phenyl ether	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Butyl benzyl phthalate	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Carbazole	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chloro-3-methylphenol	ND	0.23	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chloroaniline	ND	0.21	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Chloronaphthalene	ND	0.24	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Chlorophenol	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chlorophenyl phenyl ether	ND	0.34	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Chrysene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Di-n-butyl phthalate	ND	0.26	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Di-n-octyl phthalate	ND	0.25	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dibenz(a,h)anthracene	ND	0.25	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dibenzofuran	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,2-Dichlorobenzene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,3-Dichlorobenzene	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,4-Dichlorobenzene	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
3,3´-Dichlorobenzidine	ND	0.18	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Diethyl phthalate	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dimethyl phthalate	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dichlorophenol	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dimethylphenol	ND	0.18	0.68		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.12	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dinitrophenol	ND	0.094	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dinitrotoluene	ND	0.20	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,6-Dinitrotoluene	ND	0.25	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Fluoranthene	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Fluorene	ND	0.31	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorobenzene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorobutadiene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorocyclopentadiene	ND	0.16	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachloroethane	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Isophorone	ND	0.24	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1-Methylnaphthalene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Methylnaphthalene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Methylphenol	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 3:30:00 PM
Lab ID: 1505058-001
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
N-Nitrosodi-n-propylamine	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
N-Nitrosodiphenylamine	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Naphthalene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Nitroaniline	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
3-Nitroaniline	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Nitroaniline	ND	0.20	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Nitrobenzene	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Nitrophenol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Nitrophenol	ND	0.20	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pentachlorophenol	ND	0.14	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Phenanthrene	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Phenol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pyrene	ND	0.29	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pyridine	ND	0.19	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,2,4-Trichlorobenzene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4,5-Trichlorophenol	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4,6-Trichlorophenol	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Surr: 2-Fluorophenol	59.3		26.4-129		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: Phenol-d5	58.8		34.8-118		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 2,4,6-Tribromophenol	69.7		26.8-128		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: Nitrobenzene-d5	62.5		35.8-124		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 2-Fluorobiphenyl	63.4		24.5-139		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 4-Terphenyl-d14	55.4		29.4-129		%REC	1	5/13/2015 4:01:32 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.000359	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Toluene	0.000255	0.000166	0.00159	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Ethylbenzene	ND	0.000268	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Xylenes, Total	ND	0.000951	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000668	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,4-Trimethylbenzene	ND	0.000417	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3,5-Trimethylbenzene	ND	0.000280	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000427	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000191	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Naphthalene	ND	0.000521	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1-Methylnaphthalene	ND	0.000626	0.00319		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Methylnaphthalene	ND	0.000623	0.00319		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Acetone	0.00792	0.000996	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromobenzene	ND	0.000444	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 3:30:00 PM
Lab ID: 1505058-001
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000215	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromoform	ND	0.000413	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromomethane	ND	0.000943	0.00239		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Butanone	0.00161	0.000510	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Carbon tetrachloride	ND	0.000289	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chlorobenzene	ND	0.000162	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloroform	ND	0.000328	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloromethane	ND	0.000188	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Chlorotoluene	ND	0.000311	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Carbon disulfide	ND	0.000721	0.00797		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Chlorotoluene	ND	0.000307	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
cis-1,2-DCE	ND	0.000422	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
cis-1,3-Dichloropropene	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000468	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dibromochloromethane	ND	0.000179	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dibromomethane	ND	0.000905	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichlorobenzene	ND	0.000354	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3-Dichlorobenzene	ND	0.000270	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,4-Dichlorobenzene	ND	0.000250	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dichlorodifluoromethane	ND	0.000651	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloroethane	ND	0.000372	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloroethene	ND	0.000266	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichloropropane	ND	0.000341	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3-Dichloropropane	ND	0.000248	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2,2-Dichloropropane	ND	0.000277	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloropropene	ND	0.000292	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Hexachlorobutadiene	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Isopropylbenzene	ND	0.000370	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Isopropyltoluene	ND	0.000619	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Methylene chloride	0.000510	0.000394	0.00159	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
n-Butylbenzene	ND	0.000654	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Hexanone	0.000582	0.000332	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
n-Propylbenzene	ND	0.000298	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
sec-Butylbenzene	ND	0.000403	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Styrene	ND	0.000264	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Methyl-2-pentanone	ND	0.000673	0.00797		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
tert-Butylbenzene	ND	0.000244	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000259	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (2-4')
Project: SWMU 10
Collection Date: 4/30/2015 3:30:00 PM
Lab ID: 1505058-001
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000351	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Tetrachloroethene (PCE)	ND	0.000316	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
trans-1,2-DCE	ND	0.000258	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
trans-1,3-Dichloropropene	ND	0.000208	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,3-Trichlorobenzene	ND	0.000583	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,4-Trichlorobenzene	ND	0.000597	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,1-Trichloroethane	ND	0.000227	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,2-Trichloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Trichloroethene (TCE)	ND	0.000317	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Trichlorofluoromethane	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,3-Trichloropropane	ND	0.000560	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Vinyl chloride	ND	0.000182	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Surr: 1,2-Dichloroethane-d4	95.0	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: 4-Bromofluorobenzene	93.1	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: Toluene-d8	87.9	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.74	2.9		mg/Kg-dr	1	5/6/2015 3:22:42 AM	R25982
Surr: BFB	104	0	67.4-150		%REC	1	5/6/2015 3:22:42 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 3:45:00 PM
Lab ID: 1505058-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	8900	53	95		mg/Kg-dr	10	5/5/2015 11:48:21 PM	19040
Motor Oil Range Organics (MRO)	1600	480	480		mg/Kg-dr	10	5/5/2015 11:48:21 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/5/2015 11:48:21 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	18	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.012	0.0034	0.039	J	mg/Kg-dr	1	5/14/2015 3:45:49 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Arsenic	1.6	0.35	2.9	J	mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Barium	360	0.070	0.24		mg/Kg-dr	2	5/7/2015 2:51:53 PM	19081
Beryllium	0.93	0.0087	0.18		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Chromium	12	0.071	0.35		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Cobalt	4.1	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Iron	13000	71	290		mg/Kg-dr	100	5/7/2015 11:36:48 AM	19081
Lead	4.0	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Manganese	170	0.069	0.12		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Nickel	7.7	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Vanadium	18	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Zinc	19	0.76	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Aniline	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Azobenzene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benz(a)anthracene	ND	0.95	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(a)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(b)fluoranthene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzoic acid	ND	0.69	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-chloroethoxy)methane	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 3:45:00 PM
Lab ID: 1505058-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.93	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-ethylhexyl)phthalate	ND	1.4	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chloro-3-methylphenol	ND	1.2	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chloroaniline	ND	1.1	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Di-n-butyl phthalate	ND	1.4	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Di-n-octyl phthalate	ND	1.4	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,2-Dichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
3,3´-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dichlorophenol	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dimethylphenol	ND	0.95	3.6		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.66	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dinitrophenol	ND	0.50	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dinitrotoluene	ND	1.1	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,6-Dinitrotoluene	ND	1.3	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Fluorene	2.2	1.7	2.4	J	mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorocyclopentadiene	ND	0.84	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Isophorone	ND	1.3	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1-Methylnaphthalene	17	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Methylnaphthalene	25	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Methylphenol	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 3:45:00 PM
Lab ID: 1505058-002
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
N-Nitrosodi-n-propylamine	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Naphthalene	5.9	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Nitroaniline	ND	1.1	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Nitrobenzene	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pentachlorophenol	ND	0.76	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Phenanthrene	4.1	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pyridine	ND	1.0	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/13/2015 4:29:18 PM	19157
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.20	0.088	0.60	J	mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Toluene	5.0	0.071	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Ethylbenzene	3.6	0.055	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.084	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,4-Trimethylbenzene	13	0.030	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3,5-Trimethylbenzene	4.7	0.039	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.047	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Naphthalene	11	0.14	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1-Methylnaphthalene	28	0.36	2.4		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Methylnaphthalene	48	0.39	2.4		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Acetone	ND	0.44	8.9		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromobenzene	ND	0.044	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromodichloromethane	ND	0.049	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 3:45:00 PM
Lab ID: 1505058-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.048	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromomethane	ND	0.12	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Butanone	ND	0.38	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Carbon disulfide	ND	0.43	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Carbon tetrachloride	ND	0.058	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chlorobenzene	ND	0.046	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloroethane	ND	0.46	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloroform	ND	0.062	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloromethane	ND	0.069	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Chlorotoluene	ND	0.067	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Chlorotoluene	ND	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
cis-1,2-DCE	ND	0.075	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
cis-1,3-Dichloropropene	ND	0.041	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.10	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dibromochloromethane	ND	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dibromomethane	ND	0.063	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichlorobenzene	ND	0.036	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3-Dichlorobenzene	ND	0.070	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,4-Dichlorobenzene	ND	0.074	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dichlorodifluoromethane	ND	0.15	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloroethane	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloroethene	ND	0.041	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichloropropane	ND	0.033	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3-Dichloropropane	ND	0.082	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2,2-Dichloropropane	ND	0.087	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloropropene	ND	0.089	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Hexachlorobutadiene	ND	0.083	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Hexanone	ND	0.15	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Isopropylbenzene	1.2	0.050	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Isopropyltoluene	0.74	0.042	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Methyl-2-pentanone	ND	0.10	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Methylene chloride	ND	0.24	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
n-Butylbenzene	1.4	0.051	1.8	J	mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
n-Propylbenzene	1.8	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
sec-Butylbenzene	0.75	0.085	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Styrene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
tert-Butylbenzene	ND	0.068	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.049	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.072	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (4-6')
Project: SWMU 10
Collection Date: 4/30/2015 3:45:00 PM
Lab ID: 1505058-002
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.052	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
trans-1,2-DCE	ND	0.039	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
trans-1,3-Dichloropropene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,3-Trichlorobenzene	ND	0.13	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,4-Trichlorobenzene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,1-Trichloroethane	ND	0.091	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,2-Trichloroethane	ND	0.072	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Trichloroethene (TCE)	ND	0.058	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Trichlorofluoromethane	ND	0.18	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,3-Trichloropropane	ND	0.10	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Vinyl chloride	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Xylenes, Total	29	0.17	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Surr: Dibromofluoromethane	94.2		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: Toluene-d8	104		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: 4-Bromofluorobenzene	76.2		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	560	15	60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Surr: BFB	96.7	0	67.4-150		%REC	20	5/5/2015 3:21:56 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 3:55:00 PM
Lab ID: 1505058-003 **Matrix:** SOIL **Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/6/2015 12:14:58 AM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/6/2015 12:14:58 AM	19040
Surr: DNOP	102	0	57.9-140		%REC	1	5/6/2015 12:14:58 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.037		mg/Kg-dr	1	5/14/2015 3:47:40 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	2.7	1.5	2.9	J	mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Arsenic	1.9	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Barium	240	0.035	0.12		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Beryllium	1.0	0.0086	0.17		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Chromium	14	0.070	0.35		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Cobalt	7.9	0.044	0.35		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Iron	20000	70	290		mg/Kg-dr	100	5/8/2015 2:23:33 PM	19081
Lead	2.0	0.13	0.29		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Manganese	990	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:21:51 PM	19081
Nickel	17	0.15	0.58		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Vanadium	21	0.039	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Zinc	25	0.75	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 3:55:00 PM
Lab ID: 1505058-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
3,3´-Dichlorobenzidine	ND	0.091	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 3:55:00 PM
Lab ID: 1505058-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Surr: 2-Fluorophenol	83.7		26.4-129		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: Phenol-d5	84.5		34.8-118		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 2,4,6-Tribromophenol	82.7		26.8-128		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: Nitrobenzene-d5	81.4		35.8-124		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 2-Fluorobiphenyl	82.4		24.5-139		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 4-Terphenyl-d14	73.6		29.4-129		%REC	1	5/13/2015 4:56:50 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0180	0.000419	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Toluene	0.0104	0.000193	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Ethylbenzene	0.00241	0.000312	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Xylenes, Total	0.00797	0.00111	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000779	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,4-Trimethylbenzene	0.00238	0.000486	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3,5-Trimethylbenzene	0.00151	0.000326	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000498	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000222	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Naphthalene	0.000725	0.000607	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1-Methylnaphthalene	ND	0.000730	0.00372		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Methylnaphthalene	ND	0.000726	0.00372		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Acetone	0.00422	0.00116	0.00929	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromobenzene	ND	0.000517	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 3:55:00 PM
Lab ID: 1505058-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000251	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromoform	ND	0.000481	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromomethane	ND	0.00110	0.00279		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Butanone	0.00159	0.000595	0.00929	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Carbon tetrachloride	ND	0.000336	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chlorobenzene	ND	0.000188	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloroethane	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloroform	ND	0.000383	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloromethane	ND	0.000219	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Chlorotoluene	ND	0.000363	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Carbon disulfide	ND	0.000841	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Chlorotoluene	ND	0.000358	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
cis-1,2-DCE	ND	0.000491	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
cis-1,3-Dichloropropene	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000546	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dibromochloromethane	ND	0.000208	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dibromomethane	ND	0.00105	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichlorobenzene	ND	0.000412	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3-Dichlorobenzene	ND	0.000315	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,4-Dichlorobenzene	ND	0.000292	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dichlorodifluoromethane	ND	0.000759	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloroethane	ND	0.000434	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloroethene	ND	0.000310	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichloropropane	ND	0.000397	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3-Dichloropropane	ND	0.000289	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2,2-Dichloropropane	ND	0.000323	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloropropene	ND	0.000340	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Hexachlorobutadiene	ND	0.000375	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Isopropylbenzene	ND	0.000431	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Isopropyltoluene	ND	0.000721	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Methylene chloride	ND	0.000459	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
n-Butylbenzene	ND	0.000763	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Hexanone	ND	0.000387	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
n-Propylbenzene	0.000372	0.000348	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
sec-Butylbenzene	0.000688	0.000469	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Styrene	ND	0.000308	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Methyl-2-pentanone	ND	0.000785	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
tert-Butylbenzene	ND	0.000285	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000302	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-10 (18-20')
Project: SWMU 10
Collection Date: 4/30/2015 3:55:00 PM
Lab ID: 1505058-003
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000409	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Tetrachloroethene (PCE)	ND	0.000368	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
trans-1,2-DCE	ND	0.000300	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
trans-1,3-Dichloropropene	ND	0.000243	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,3-Trichlorobenzene	ND	0.000680	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,4-Trichlorobenzene	ND	0.000696	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,1-Trichloroethane	ND	0.000264	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,2-Trichloroethane	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Trichloroethene (TCE)	ND	0.000369	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Trichlorofluoromethane	ND	0.000375	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,3-Trichloropropane	ND	0.000652	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Vinyl chloride	ND	0.000212	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: 4-Bromofluorobenzene	99.2	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: Toluene-d8	88.2	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/6/2015 3:51:34 AM	R25982
Surr: BFB	107	0	67.4-150		%REC	1	5/6/2015 3:51:34 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762974-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505058-001C SWMU 10-10 2-4 FT

Project # :

Collected By :
Collection Date : 04/30/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	190		mV	2580 B-2011	05/10/15	1
pH	7.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-01 (PH) - 7.3 at 21.1c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762974-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505058-002C SWMU 10-10 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	180		mV	2580 B-2011	05/10/15	1
pH	7.8	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-02 (PH) - 7.8 at 21.5c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762974-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505058-003C SWMU 10-10 18-20 FT

Project # :

Collected By :
Collection Date : 04/30/15 15:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	150		mV	2580 B-2011	05/10/15	1
pH	9.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-03 (PH) - 9.1 at 21.0c

ESC
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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762974

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium,Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium,Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19040**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID **LCS-19040**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19157**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19227**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**19227**	RunNo:	**26201**					
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777418**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19227**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**19227**	RunNo:	**26201**					
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777419**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-19081**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19081**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772230** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID **MB-19081**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19081**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772232** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType: **MBLK**			TestCode: **EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**PBS**	Batch ID: **R25941**			RunNo: **25941**					
Prep Date:		Analysis Date: **5/4/2015**			SeqNo: **770909**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	**2.5ug gro lcs**	SampType: **LCS**			TestCode: **EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**LCSS**	Batch ID: **R25941**			RunNo: **25941**					
Prep Date:		Analysis Date: **5/4/2015**			SeqNo: **770910**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	**5mL rb**	SampType: **MBLK**			TestCode: **EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**PBS**	Batch ID: **R25982**			RunNo: **25982**					
Prep Date:		Analysis Date: **5/5/2015**			SeqNo: **771006**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID	**2.5ug gro lcs**	SampType: **LCS**			TestCode: **EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**LCSS**	Batch ID: **R25982**			RunNo: **25982**					
Prep Date:		Analysis Date: **5/5/2015**			SeqNo: **771007**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505058** RcptNo: 1

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:50:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 10:08:22 AM**

Reviewed By: AG 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING, SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM. 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☑ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
EDD (Type): EXCEL

Turn-Around Time: ☑ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505058	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)	Air Bubbles (Y or N)
30.15	1530	SOIL	SWMU 10-10(2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓	
				VIALS-2	MeOH	-001										✓			
				VIALS-2	SOB1	-001										✓			
	1545	SOIL	SWMU 10-10(4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓	
				VIALS-2	MeOH	-002										✓			
				VIALS-2	SOB1	-002										✓			
	1555	SOIL	SWMU 10-10(18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓	
				VIALS-2	MeOH	-003										✓			
				VIALS-2	SOB1	-003										✓			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.1.15	0730			5/1/15	11/38
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-1-15	1350			05/01/15	1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505059

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (2-4')
Project: SWMU 10
Collection Date: 5/1/2015 10:10:00 AM
Lab ID: 1505059-001 **Matrix:** SOIL **Received Date:** 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	39	5.5	9.9		mg/Kg-dr	1	5/6/2015 12:41:57 AM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/6/2015 12:41:57 AM	19040
Surr: DNOP	107	0	57.9-140		%REC	1	5/6/2015 12:41:57 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.033	0.0033	0.038	J	mg/Kg-dr	1	5/14/2015 3:49:30 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/8/2015 2:55:49 PM	19080
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Barium	220	0.036	0.12		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Beryllium	0.85	0.0088	0.18		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Cobalt	4.8	0.045	0.36		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Iron	15000	72	300		mg/Kg-dr	100	5/9/2015 10:14:39 AM	19080
Lead	2.7	0.13	0.30		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Manganese	860	0.35	0.60		mg/Kg-dr	5	5/8/2015 3:02:21 PM	19080
Nickel	8.4	0.15	0.60		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Vanadium	23	0.040	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Zinc	20	0.77	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Acenaphthylene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Aniline	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Anthracene	ND	0.20	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Azobenzene	ND	0.26	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benz(a)anthracene	ND	0.19	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(a)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(b)fluoranthene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(g,h,i)perylene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(k)fluoranthene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzoic acid	ND	0.13	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzyl alcohol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-chloroethoxy)methane	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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Hall Environmental Analysis Laboratory, Inc.

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.18	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.27	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Bromophenyl phenyl ether	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Butyl benzyl phthalate	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Carbazole	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chloro-3-methylphenol	ND	0.24	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chloroaniline	ND	0.22	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Chloronaphthalene	ND	0.25	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Chlorophenol	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chlorophenyl phenyl ether	ND	0.35	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Chrysene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Di-n-butyl phthalate	ND	0.27	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Di-n-octyl phthalate	ND	0.26	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dibenz(a,h)anthracene	ND	0.26	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dibenzofuran	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,2-Dichlorobenzene	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,3-Dichlorobenzene	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,4-Dichlorobenzene	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
3,3´-Dichlorobenzidine	ND	0.18	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Diethyl phthalate	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dimethyl phthalate	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dichlorophenol	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dimethylphenol	ND	0.19	0.71		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.13	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dinitrophenol	ND	0.098	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dinitrotoluene	ND	0.21	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,6-Dinitrotoluene	ND	0.26	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Fluoranthene	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Fluorene	ND	0.32	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorobenzene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorobutadiene	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorocyclopentadiene	ND	0.16	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachloroethane	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Isophorone	ND	0.25	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Methylphenol	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157

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Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
N-Nitrosodi-n-propylamine	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
N-Nitrosodiphenylamine	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Naphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Nitroaniline	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
3-Nitroaniline	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Nitroaniline	ND	0.21	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Nitrobenzene	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Nitrophenol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Nitrophenol	ND	0.20	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pentachlorophenol	ND	0.15	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Phenanthrene	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Phenol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pyrene	ND	0.30	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pyridine	ND	0.20	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,2,4-Trichlorobenzene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4,5-Trichlorophenol	ND	0.28	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4,6-Trichlorophenol	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Surr: 2-Fluorophenol	61.5		26.4-129		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: Phenol-d5	65.5		34.8-118		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 2,4,6-Tribromophenol	75.1		26.8-128		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: Nitrobenzene-d5	61.2		35.8-124		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 2-Fluorobiphenyl	69.1		24.5-139		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 4-Terphenyl-d14	59.2		29.4-129		%REC	1	5/13/2015 5:24:41 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00239	0.000435	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Toluene	0.00181	0.000201	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Ethylbenzene	0.000502	0.000325	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Xylenes, Total	0.00146	0.00115	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Methyl tert-butyl ether (MTBE)	0.00140	0.000809	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,4-Trimethylbenzene	ND	0.000505	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3,5-Trimethylbenzene	ND	0.000339	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000517	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000231	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Naphthalene	ND	0.000631	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1-Methylnaphthalene	ND	0.000758	0.00386		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Methylnaphthalene	ND	0.000754	0.00386		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Acetone	0.0111	0.00121	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromobenzene	ND	0.000537	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000261	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromoform	ND	0.000500	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromomethane	ND	0.00114	0.00290		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Butanone	0.00273	0.000618	0.00965	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Carbon tetrachloride	ND	0.000349	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chlorobenzene	ND	0.000196	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloroform	ND	0.000398	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloromethane	ND	0.000228	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Chlorotoluene	ND	0.000377	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Carbon disulfide	ND	0.000874	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Chlorotoluene	ND	0.000372	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
cis-1,2-DCE	ND	0.000511	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
cis-1,3-Dichloropropene	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000567	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dibromochloromethane	ND	0.000217	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dibromomethane	ND	0.00110	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichlorobenzene	ND	0.000428	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3-Dichlorobenzene	ND	0.000327	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,4-Dichlorobenzene	ND	0.000303	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dichlorodifluoromethane	ND	0.000788	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloroethane	0.000473	0.000451	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloroethene	ND	0.000322	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichloropropane	ND	0.000413	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3-Dichloropropane	ND	0.000301	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2,2-Dichloropropane	ND	0.000335	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloropropene	ND	0.000354	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Hexachlorobutadiene	ND	0.000390	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Isopropylbenzene	ND	0.000448	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Isopropyltoluene	ND	0.000749	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Methylene chloride	0.000637	0.000477	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
n-Butylbenzene	ND	0.000793	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Hexanone	0.000724	0.000402	0.00965	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
n-Propylbenzene	ND	0.000361	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
sec-Butylbenzene	ND	0.000488	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Styrene	ND	0.000320	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Methyl-2-pentanone	ND	0.000815	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
tert-Butylbenzene	ND	0.000296	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000314	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107

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Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000424	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Tetrachloroethene (PCE)	ND	0.000383	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
trans-1,2-DCE	ND	0.000312	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
trans-1,3-Dichloropropene	ND	0.000252	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,3-Trichlorobenzene	ND	0.000706	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,4-Trichlorobenzene	ND	0.000723	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,1-Trichloroethane	ND	0.000275	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,2-Trichloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Trichloroethene (TCE)	ND	0.000384	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Trichlorofluoromethane	ND	0.000390	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,3-Trichloropropane	ND	0.000678	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Vinyl chloride	ND	0.000220	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Surr: 1,2-Dichloroethane-d4	98.3	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: 4-Bromofluorobenzene	91.7	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: Toluene-d8	87.4	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.74	3.0		mg/Kg-dr	1	5/6/2015 4:20:25 AM	R25982
Surr: BFB	105	0	67.4-150		%REC	1	5/6/2015 4:20:25 AM	R25982

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (4-6')
Project: SWMU 10
Collection Date: 5/1/2015 10:20:00 AM
Lab ID: 1505059-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/6/2015 1:09:05 AM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/6/2015 1:09:05 AM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/6/2015 1:09:05 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0057	0.0035	0.040	J	mg/Kg-dr	1	5/14/2015 3:51:14 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	7.9	15		mg/Kg-dr	5	5/8/2015 3:05:50 PM	19080
Arsenic	2.2	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Barium	200	0.036	0.12		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Beryllium	0.92	0.0089	0.18		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Cobalt	5.7	0.045	0.36		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 11:49:08 AM	19080
Lead	2.5	0.13	0.30		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Manganese	710	0.35	0.60		mg/Kg-dr	5	5/8/2015 3:05:50 PM	19080
Nickel	10	0.15	0.60		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Vanadium	24	0.040	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Zinc	19	0.77	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzoic acid	ND	0.068	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157

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Project: SWMU 10
Collection Date: 5/1/2015 10:20:00 AM
Lab ID: 1505059-002 **Matrix:** SOIL **Received Date:** 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.091	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Di-n-butyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
3,3´-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157

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Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pentachlorophenol	ND	0.074	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Surr: 2-Fluorophenol	60.7		26.4-129		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: Phenol-d5	61.3		34.8-118		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 2,4,6-Tribromophenol	73.6		26.8-128		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: Nitrobenzene-d5	60.5		35.8-124		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 2-Fluorobiphenyl	67.1		24.5-139		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 4-Terphenyl-d14	63.6		29.4-129		%REC	1	5/13/2015 5:52:34 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0123	0.000401	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Toluene	0.00801	0.000185	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Ethylbenzene	0.00188	0.000300	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Xylenes, Total	0.00622	0.00106	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Methyl tert-butyl ether (MTBE)	0.000891	0.000747	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,4-Trimethylbenzene	0.00194	0.000466	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3,5-Trimethylbenzene	0.00119	0.000313	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000477	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000213	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Naphthalene	ND	0.000582	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1-Methylnaphthalene	ND	0.000700	0.00356		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Methylnaphthalene	ND	0.000696	0.00356		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Acetone	0.00723	0.00111	0.00891	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromobenzene	ND	0.000496	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107

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CLIENT: Western Refining Company
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Project: SWMU 10
Collection Date: 5/1/2015 10:20:00 AM
Lab ID: 1505059-002
Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000241	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromoform	ND	0.000462	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromomethane	ND	0.00105	0.00267		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Butanone	0.00175	0.000570	0.00891	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Carbon tetrachloride	ND	0.000322	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chlorobenzene	ND	0.000181	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloroethane	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloroform	ND	0.000367	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloromethane	ND	0.000210	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Chlorotoluene	ND	0.000348	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Carbon disulfide	ND	0.000806	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Chlorotoluene	ND	0.000343	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
cis-1,2-DCE	ND	0.000471	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
cis-1,3-Dichloropropene	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000523	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dibromochloromethane	ND	0.000200	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dibromomethane	ND	0.00101	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichlorobenzene	ND	0.000395	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3-Dichlorobenzene	ND	0.000302	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,4-Dichlorobenzene	ND	0.000280	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dichlorodifluoromethane	ND	0.000727	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloroethane	ND	0.000416	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloroethene	ND	0.000297	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichloropropane	ND	0.000381	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3-Dichloropropane	ND	0.000277	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2,2-Dichloropropane	ND	0.000310	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloropropene	ND	0.000326	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Hexachlorobutadiene	ND	0.000359	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Isopropylbenzene	ND	0.000413	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Isopropyltoluene	ND	0.000691	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Methylene chloride	0.000686	0.000440	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
n-Butylbenzene	ND	0.000731	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Hexanone	ND	0.000371	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
n-Propylbenzene	ND	0.000334	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
sec-Butylbenzene	0.000650	0.000450	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Styrene	ND	0.000295	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Methyl-2-pentanone	ND	0.000752	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
tert-Butylbenzene	ND	0.000273	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000290	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (4-6')
Project: SWMU 10
Collection Date: 5/1/2015 10:20:00 AM
Lab ID: 1505059-002
Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000392	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Tetrachloroethene (PCE)	ND	0.000353	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
trans-1,2-DCE	ND	0.000288	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
trans-1,3-Dichloropropene	ND	0.000233	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,3-Trichlorobenzene	ND	0.000652	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,4-Trichlorobenzene	ND	0.000667	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,1-Trichloroethane	ND	0.000253	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,2-Trichloroethane	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Trichloroethene (TCE)	ND	0.000354	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Trichlorofluoromethane	ND	0.000360	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,3-Trichloropropane	ND	0.000626	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Vinyl chloride	ND	0.000203	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Surr: 1,2-Dichloroethane-d4	94.8	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: 4-Bromofluorobenzene	95.1	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: Dibromofluoromethane	97.2	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: Toluene-d8	91.5	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.82	3.3		mg/Kg-dr	1	5/6/2015 4:49:21 AM	R25982
Surr: BFB	112	0	67.4-150		%REC	1	5/6/2015 4:49:21 AM	R25982

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (18-20')
Project: SWMU 10
Collection Date: 5/1/2015 10:30:00 AM
Lab ID: 1505059-003 **Matrix:** SOIL **Received Date:** 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/6/2015 1:36:03 AM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/6/2015 1:36:03 AM	19040
Surr: DNOP	107	0	57.9-140		%REC	1	5/6/2015 1:36:03 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0035	0.0035	0.040	J	mg/Kg-dr	1	5/14/2015 3:52:59 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	7.6	14		mg/Kg-dr	5	5/13/2015 10:27:12 AM	19080
Arsenic	ND	1.7	14		mg/Kg-dr	5	5/13/2015 10:27:12 AM	19080
Barium	250	0.034	0.12		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Chromium	16	0.070	0.35		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Cobalt	7.2	0.044	0.35		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Iron	24000	70	290		mg/Kg-dr	100	5/7/2015 11:50:31 AM	19080
Lead	2.2	0.13	0.29		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Manganese	540	0.14	0.23		mg/Kg-dr	2	5/7/2015 3:07:47 PM	19080
Nickel	16	0.15	0.58		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Vanadium	23	0.039	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Zinc	24	0.75	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (18-20')
Project: SWMU 10
Collection Date: 5/1/2015 10:30:00 AM
Lab ID: 1505059-003
Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
3,3´-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (18-20')
Project: SWMU 10
Collection Date: 5/1/2015 10:30:00 AM
Lab ID: 1505059-003
Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Phenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pyridine	ND	0.098	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Surr: 2-Fluorophenol	66.9		26.4-129		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: Phenol-d5	65.1		34.8-118		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 2,4,6-Tribromophenol	67.9		26.8-128		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: Nitrobenzene-d5	65.4		35.8-124		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 2-Fluorobiphenyl	72.3		24.5-139		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 4-Terphenyl-d14	63.1		29.4-129		%REC	1	5/13/2015 6:20:19 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0149	0.000496	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Toluene	0.00962	0.000229	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Ethylbenzene	0.00213	0.000370	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Xylenes, Total	0.00711	0.00131	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000922	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,4-Trimethylbenzene	0.00201	0.000575	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3,5-Trimethylbenzene	0.00114	0.000386	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000589	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000263	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Naphthalene	ND	0.000719	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1-Methylnaphthalene	ND	0.000864	0.00440		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Methylnaphthalene	ND	0.000859	0.00440		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Acetone	0.00158	0.00137	0.0110	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromobenzene	ND	0.000612	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (18-20')
Project: SWMU 10
Collection Date: 5/1/2015 10:30:00 AM
Lab ID: 1505059-003
Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000297	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromoform	ND	0.000570	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromomethane	ND	0.00130	0.00330		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Butanone	ND	0.000704	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Carbon tetrachloride	ND	0.000398	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chlorobenzene	ND	0.000223	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloroethane	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloroform	ND	0.000453	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloromethane	ND	0.000259	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Chlorotoluene	ND	0.000429	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Carbon disulfide	ND	0.000995	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Chlorotoluene	ND	0.000424	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
cis-1,2-DCE	ND	0.000582	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
cis-1,3-Dichloropropene	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000646	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dibromochloromethane	ND	0.000247	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dibromomethane	ND	0.00125	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichlorobenzene	ND	0.000488	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3-Dichlorobenzene	ND	0.000373	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,4-Dichlorobenzene	ND	0.000345	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dichlorodifluoromethane	ND	0.000898	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloroethane	ND	0.000514	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloroethene	ND	0.000367	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichloropropane	ND	0.000470	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3-Dichloropropane	ND	0.000342	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2,2-Dichloropropane	ND	0.000382	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloropropene	ND	0.000403	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Hexachlorobutadiene	ND	0.000444	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Isopropylbenzene	ND	0.000510	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Isopropyltoluene	ND	0.000853	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Methylene chloride	0.000704	0.000543	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
n-Butylbenzene	ND	0.000903	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Hexanone	ND	0.000457	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
n-Propylbenzene	ND	0.000412	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
sec-Butylbenzene	0.000792	0.000555	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Styrene	ND	0.000364	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Methyl-2-pentanone	ND	0.000929	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
tert-Butylbenzene	ND	0.000337	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000358	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-7 (18-20')
Project: SWMU 10
Collection Date: 5/1/2015 10:30:00 AM
Lab ID: 1505059-003
Matrix: SOIL
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000484	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Tetrachloroethene (PCE)	ND	0.000436	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
trans-1,2-DCE	ND	0.000355	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
trans-1,3-Dichloropropene	ND	0.000288	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,3-Trichlorobenzene	ND	0.000805	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,4-Trichlorobenzene	ND	0.000824	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,1-Trichloroethane	ND	0.000313	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,2-Trichloroethane	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Trichloroethene (TCE)	ND	0.000437	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Trichlorofluoromethane	ND	0.000444	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,3-Trichloropropane	ND	0.000772	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Vinyl chloride	ND	0.000251	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: Dibromofluoromethane	97.0	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: Toluene-d8	94.9	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/6/2015 5:18:13 AM	R25982
Surr: BFB	107	0	67.4-150		%REC	1	5/6/2015 5:18:13 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762978-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505059-001C SWMU 10-7 2-4 FT

Project # :

Collected By :
Collection Date : 05/01/15 10:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-01 (PH) - 8.1 at 20.7c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762978-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505059-002C SWMU 10-7 4-6 FT

Project # :

Collected By :
Collection Date : 05/01/15 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	70.		mV	2580 B-2011	05/12/15	1
pH	8.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-02 (PH) - 8.6 at 20.8c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762978-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505059-003C SWMU 10-7 18-20 FT

Project # :

Collected By :
Collection Date : 05/01/15 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	60.		mV	2580 B-2011	05/12/15	1
pH	8.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-03 (PH) - 8.7 at 20.7c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762978

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787747	05/12/15 05:36
Cyanide	< .25	mg/kg			WG787856	05/12/15 12:46

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L763354-01	WG787747
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856
ORP	mV	73.0	70.0	4.20	20	L762978-02	WG788141
ORP	mV	22.0	20.0	9.52	20	L763853-01	WG788141

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
ORP	mV	100	100.	100.	90-110	WG787860
Chromium,Hexavalent	mg/kg	59.8	52.0	87.0	80-120	WG787747
Cyanide	mg/kg	101	108.	107.	50-150	WG787856
ORP	mV	100	109.	109.	90-110	WG788141

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Chromium,Hexavalent	mg/kg	52.2	52.0	87.0	80-120	0.384	20	WG787747
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856
ORP	mV	110.	109.	110.	90-110	0.913	20	WG788141

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L762978

May 12, 2015

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.9	0.0	20	100.	75-125	L763354-01	WG787747
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.5	20.9	102.	75-125	1.93	20	L763354-01	WG787747
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787168: R3035796: L762978-01 02 03
WG787860: R3036066: L762978-01
WG787747: R3036267: L762978-01 02 03
WG787856: R3036409: L762978-01 02 03
WG788141: R3036493: L762978-02 03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19040**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**PBS**	Batch ID:	**19040**	RunNo:	**25952**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID	**LCS-19040**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**LCSS**	Batch ID:	**19040**	RunNo:	**25952**
Prep Date:	**5/4/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19107**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19157**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19227**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**19227**	RunNo:	**26201**					
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777418**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19227**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**19227**	RunNo:	**26201**					
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777419**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19080**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772227** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID **LCS-19080**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**PBS**	Batch ID:	**R25982**	RunNo:	**25982**
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**LCSS**	Batch ID:	**R25982**	RunNo:	**25982**
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505059** RcptNo: 1

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:48:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 10:11:48 AM**

Reviewed By: AG 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: Standard ☒ Level 4 (Full Validation)
Accreditation: NELAP ☐ Other
EDD (Type): EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505059	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
1.15	1010	SOIL	SWMU 10-7 (2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MEOH	-001										✓					
	↓	↓	↓	VIALS-2	SOBI	-001										✓					
	1020	SOIL	SWMU 10-7 (4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MEOH	-002										✓					
	↓	↓	↓	VIALS-2	SOBI	-002										✓					
	1030	SOIL	SWMU 10-7 (18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MEOH	-003										✓					
↓	↓	↓	↓	VIALS-2	SOBI	-003										✓					

Date: 1.15 Time: 1113 Relinquished by:
Received by: Date Time 11:
Date: 1-15 Time: 13:48 Relinquished by:
Received by: Date Time 05/01/15 1348

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505218

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505218**
Date: **10/12/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8270:
Sample "SWMU 10-5-GW" had two low spike surrogate recoveries out of the 6 spiked surrogates. The sample matrix spike (MS) and matirx spike duplicate (MSD) also had the same low surrogate recoveries (the recoveries for the MSD were all acceptable, but still low for 2 of the 6). These low surrgoate recoveries are attributed to the sample matrix.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5-GW
Project: SWMU 10
Collection Date: 5/4/2015 9:10:00 AM
Lab ID: 1505218-001 **Matrix:** AQUEOUS **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	3.1	0.91	1.0		mg/L	1	5/8/2015 1:27:13 PM	19094
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/8/2015 1:27:13 PM	19094
Surr: DNOP	115	0	76.5-150		%REC	1	5/8/2015 1:27:13 PM	19094
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.21	0.012	0.050		mg/L	1	5/6/2015 5:40:49 PM	R26016
Surr: BFB	174	0	80-120	S	%REC	1	5/6/2015 5:40:49 PM	R26016
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/6/2015 2:46:14 PM	R26034
Chloride	2800	67	250		mg/L	500	5/7/2015 6:13:17 PM	R26054
Sulfate	310	2.3	10		mg/L	20	5/6/2015 2:58:38 PM	R26034
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.32	0.00095	0.0020		mg/L	1	5/6/2015 6:34:09 PM	R26030
Beryllium	0.00042	0.00031	0.0020	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:34:09 PM	R26030
Chromium	0.0039	0.0018	0.0060	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Cobalt	0.0035	0.0013	0.0060	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Iron	0.011	0.0073	0.020	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Manganese	0.27	0.00027	0.0020	*	mg/L	1	5/6/2015 6:34:09 PM	R26030
Nickel	0.0028	0.0021	0.010	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:34:09 PM	R26030
Vanadium	0.0020	0.0015	0.050	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Zinc	0.038	0.0028	0.010		mg/L	1	5/6/2015 6:34:09 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.57	0.00095	0.0020		mg/L	1	5/11/2015 5:53:07 PM	19113
Beryllium	0.0011	0.00031	0.0020	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Cadmium	ND	0.00097	0.0020		mg/L	1	5/11/2015 5:53:07 PM	19113
Chromium	0.0051	0.0022	0.0060	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Cobalt	0.0056	0.0013	0.0060	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Iron	5.7	0.073	0.20	*	mg/L	10	5/12/2015 1:51:10 PM	19113
Manganese	0.69	0.0015	0.0020	*	mg/L	1	5/11/2015 5:53:07 PM	19113
Nickel	0.0044	0.0023	0.010	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Silver	ND	0.0021	0.0050		mg/L	1	5/11/2015 5:53:07 PM	19113
Vanadium	0.013	0.0015	0.050	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Zinc	0.034	0.0036	0.010		mg/L	1	5/11/2015 5:53:07 PM	19113
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00071	0.0050		mg/L	5	5/19/2015 2:02:16 PM	R26294
Arsenic	0.012	0.0032	0.050	J	mg/L	50	5/19/2015 1:57:20 PM	R26294

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.00013	0.0050		mg/L	5	5/19/2015 2:02:16 PM	R26294
Selenium	0.036	0.0097	0.050	J	mg/L	50	5/19/2015 1:57:20 PM	R26294
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.00080	0.00022	0.0010	J	mg/L	1	5/8/2015 1:59:29 PM	19113
Arsenic	ND	0.015	0.050		mg/L	50	5/15/2015 12:23:43 PM	19113
Lead	0.0064	0.000069	0.0010		mg/L	1	5/8/2015 1:59:29 PM	19113
Selenium	0.036	0.0097	0.050	J	mg/L	50	5/15/2015 12:23:43 PM	19113
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/14/2015 10:16:51 AM	19207
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Acenaphthylene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Aniline	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Anthracene	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Azobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzoic acid	ND	1.0	20		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzyl alcohol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Carbazole	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chloroaniline	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Chlorophenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Chrysene	ND	2.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Diethyl phthalate	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Fluoranthene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Fluorene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachloroethane	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Isophorone	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Methylphenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Naphthalene	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Nitroaniline	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3-Nitroaniline	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Nitroaniline	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Nitrobenzene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Nitrophenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Nitrophenol	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Pentachlorophenol	ND	1.1	20		µg/L	1	5/13/2015 11:20:07 AM	19150
Phenanthrene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Phenol	ND	1.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Pyrene	ND	2.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Surr: 2-Fluorophenol	3.97	0	14.9-111	S	%REC	1	5/13/2015 11:20:07 AM	19150
Surr: Phenol-d5	13.2	0	11.3-108		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 2,4,6-Tribromophenol	4.22	0	15.7-154	S	%REC	1	5/13/2015 11:20:07 AM	19150
Surr: Nitrobenzene-d5	82.1	0	47.8-106		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 2-Fluorobiphenyl	90.2	0	21.3-123		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 4-Terphenyl-d14	69.7	0	14.3-135		%REC	1	5/13/2015 11:20:07 AM	19150
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	27	0.065	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Toluene	2.7	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Ethylbenzene	1.6	0.10	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,4-Trimethylbenzene	3.7	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3,5-Trimethylbenzene	3.9	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichloroethane (EDC)	0.32	0.18	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1-Methylnaphthalene	3.1	0.54	4.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Methylnaphthalene	3.8	0.59	4.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144

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EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloroethene	0.12	0.099	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Isopropylbenzene	1.2	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Isopropyltoluene	0.92	0.19	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Methyl-2-pentanone	0.61	0.26	10	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
n-Butylbenzene	0.40	0.25	3.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
n-Propylbenzene	0.64	0.16	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
sec-Butylbenzene	0.60	0.23	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Xylenes, Total	13	0.28	1.5		µg/L	1	5/12/2015 5:14:59 PM	R26144
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-5-GW
Project: SWMU 10
Collection Date: 5/4/2015 9:10:00 AM
Lab ID: 1505218-001 **Matrix:** AQUEOUS **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	97.0	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144
Surr: Toluene-d8	102	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505218-002
Matrix: TRIP BLANK
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 7:08:28 PM	R26016
Surr: BFB	86.2	0	80-120		%REC	1	5/6/2015 7:08:28 PM	R26016
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Toluene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505218-002
Matrix: TRIP BLANK
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 5:42:27 PM	R26144
Surr: 1,2-Dichloroethane-d4	98.6	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: Dibromofluoromethane	98.4	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: Toluene-d8	101	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763563-01

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505218-001H SWMU 10-5 GW

Project # :

Collected By :
Collection Date : 05/04/15 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.013	0.0050	mg/l	4500CN E-2011	05/12/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763563-02

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505218-001I SWMU 10-5 GW

Project # :

Collected By :
Collection Date : 05/04/15 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

ESC
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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L763563

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19
Cyanide	< .005	mg/l			WG788140	05/12/15 13:30

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013
Cyanide	mg/l	0.0	0.0	0.0	20	L763748-02	WG788140
Cyanide	mg/l	0.0	0.0	0.0	20	L763536-08	WG788140

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013
Cyanide	mg/l	.1	0.101	101.	90-110	WG788140

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013
Cyanide	mg/l	0.0963	0.101	96.0	90-110	4.76	20	WG788140

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013
Cyanide	mg/l	0.195	0.0	.2	98.0	90-110	L763536-09	WG788140

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013
Cyanide	mg/l	0.198	0.195	99.0	90-110	1.53	20	L763536-09	WG788140

Batch number /Run number / Sample number cross reference

WG788013: R3036316: L763563-02
WG788140: R3036440: L763563-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID **MB-19113**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **19113**	RunNo: **26109**
Prep Date: **5/7/2015**	Analysis Date: **5/11/2015**	SeqNo: **774475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19113**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**19113**	RunNo:	**26109**					
Prep Date:	**5/7/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774475**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19113**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**19113**	RunNo:	**26109**					
Prep Date:	**5/7/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774476**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.0	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Iron	0.48	0.020	0.5000	0	95.4	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	98.3	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19113**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19113**	RunNo:	**26070**					
Prep Date:	**5/7/2015**	Analysis Date:	**5/8/2015**	SeqNo:	**773047**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781112**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781113**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781115**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781116**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19207**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19207**	RunNo:	**26178**				
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776900**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19207**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19207**	RunNo:	**26178**				
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776901**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26034**	RunNo: **26034**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26034**	RunNo: **26034**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771823** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.8	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26054**	RunNo: **26054**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772545** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26054**	RunNo: **26054**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772546** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19094**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772816** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		110	76.5	150			

Sample ID **LCS-19094**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772817** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	109	60.1	156			
Surr: DNOP	0.63		0.5000		125	76.5	150			

Sample ID **1505218-001CMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **SWMU 10-5-GW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	7.9	1.0	5.000	3.064	95.8	75.9	164			
Surr: DNOP	0.63		0.5000		127	76.5	150			

Sample ID **1505218-001CMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **SWMU 10-5-GW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772957** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	8.8	1.0	5.000	3.064	114	75.9	164	10.9	22.1	
Surr: DNOP	0.66		0.5000		132	76.5	150	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775972** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.5	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.9	80	120			
Surr: BFB	21		20.00		104	80	120			

Sample ID **1505218-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-5-GW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.63	0.050	0.5000	0.2116	83.3	51	131			
Surr: BFB	34		20.00		168	80	120			S

Sample ID **1505218-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-5-GW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.63	0.050	0.5000	0.2116	83.2	51	131	0.0319	20	
Surr: BFB	34		20.00		172	80	120	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	0.32	3.0								J
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID **100nglcs,200ngT2lc**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775656** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	98.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100nglcs,200ngT2lc**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775656** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	120	75.6	144			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	0.40	10								J
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.21	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	10		10.00		99.7	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775720** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	99.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		67.3	14.9	111			
Surr: Phenol-d5	150		200.0		73.2	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		74.7	15.7	154			
Surr: Nitrobenzene-d5	77		100.0		77.0	47.8	106			
Surr: 2-Fluorobiphenyl	81		100.0		80.8	21.3	123			
Surr: 4-Terphenyl-d14	54		100.0		54.3	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19150**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	74.2	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	80.3	58.1	103			
2-Chlorophenol	150	10	200.0	0	72.9	49.5	96.8			
1,4-Dichlorobenzene	72	10	100.0	0	71.6	40.4	89.4			
2,4-Dinitrotoluene	58	10	100.0	0	58.3	38.6	91.3			
N-Nitrosodi-n-propylamine	78	10	100.0	0	77.9	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	68.0	26.4	108			
Pentachlorophenol	130	20	200.0	0	64.7	36.5	86.6			
Phenol	150	10	200.0	0	75.0	29.3	108			
Pyrene	65	10	100.0	0	65.2	45.7	100			
1,2,4-Trichlorobenzene	89	10	100.0	0	88.8	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		78.0	14.9	111			
Surr: Phenol-d5	170		200.0		84.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.8	15.7	154			
Surr: Nitrobenzene-d5	87		100.0		86.8	47.8	106			
Surr: 2-Fluorobiphenyl	84		100.0		84.2	21.3	123			
Surr: 4-Terphenyl-d14	57		100.0		57.2	14.3	135			

Sample ID **1505218-001Dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-5-GW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776623** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	100	10	100.0	0	99.6	46.4	121			
4-Chloro-3-methylphenol	100	10	200.0	0	52.1	45.3	135			
2-Chlorophenol	28	10	200.0	0	13.8	28.7	129			S
1,4-Dichlorobenzene	91	10	100.0	0	91.4	42.6	104			
2,4-Dinitrotoluene	80	10	100.0	3.540	76.9	28.9	126			
N-Nitrosodi-n-propylamine	98	10	100.0	0	97.7	49.2	117			
4-Nitrophenol	ND	10	200.0	0	0	18.1	97.2			S
Pentachlorophenol	11	20	200.0	7.960	1.72	24.8	127			JS
Phenol	37	10	200.0	0	18.3	17.9	93.6			
Pyrene	73	10	100.0	0	73.5	29.6	142			
1,2,4-Trichlorobenzene	100	10	100.0	0	101	39.5	109			
Surr: 2-Fluorophenol	15		200.0		7.30	14.9	111			S
Surr: Phenol-d5	41		200.0		20.4	11.3	108			
Surr: 2,4,6-Tribromophenol	15		200.0		7.62	15.7	154			S
Surr: Nitrobenzene-d5	100		100.0		100	47.8	106			
Surr: 2-Fluorobiphenyl	100		100.0		104	21.3	123			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505218-001Dms**	SampType:	**MS**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**SWMU 10-5-GW**	Batch ID:	**19150**	RunNo:	**26173**
Prep Date:	**5/11/2015**	Analysis Date:	**5/13/2015**	SeqNo:	**776623** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	73		100.0		72.8	14.3	135			

Sample ID	**1505218-001Dmsd**	SampType:	**MSD**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**SWMU 10-5-GW**	Batch ID:	**19150**	RunNo:	**26173**
Prep Date:	**5/11/2015**	Analysis Date:	**5/13/2015**	SeqNo:	**776624** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	96	10	100.0	0	96.2	46.4	121	3.55	31.3	
4-Chloro-3-methylphenol	160	10	200.0	0	77.6	45.3	135	39.4	29	R
2-Chlorophenol	80	10	200.0	0	40.1	28.7	129	97.8	28.4	R
1,4-Dichlorobenzene	100	10	100.0	0	100	42.6	104	8.98	28.2	
2,4-Dinitrotoluene	77	10	100.0	3.540	73.4	28.9	126	4.40	22.9	
N-Nitrosodi-n-propylamine	110	10	100.0	0	107	49.2	117	8.65	28.8	
4-Nitrophenol	ND	10	200.0	0	0	18.1	97.2	0	41.5	S
Pentachlorophenol	12	20	200.0	7.960	2.08	24.8	127	6.12	45.1	JS
Phenol	98	10	200.0	0	48.9	17.9	93.6	91.0	33.9	R
Pyrene	74	10	100.0	0	74.1	29.6	142	0.813	33.6	
1,2,4-Trichlorobenzene	99	10	100.0	0	99.2	39.5	109	2.03	28.2	
Surr: 2-Fluorophenol	40		200.0		20.0	14.9	111	0	0	
Surr: Phenol-d5	100		200.0		51.4	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	33		200.0		16.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	95		100.0		94.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	98		100.0		98.1	21.3	123	0	0	
Surr: 4-Terphenyl-d14	73		100.0		72.9	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505218 RcptNo: 1

Received by/date: AG 05/05/15

Logged By: Ashley Gallegos 5/5/2015 2:55:00 PM

Completed By: Ashley Gallegos 5/6/2015 9:05:02 AM

Reviewed By: 05/06/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☑	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 (1) (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? no
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CS

CS 05/06/15 Sample -002B (2 of 2) has a bubble.

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks: For 300 analysis, poured off from a 1L Amber unpreserved into a 125 ml bottle. CS 05/06/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5.4.15	0910	WATER	SWMU 10-5-GW	40 ML VOA-6	HCL	-001
				1 LITER AMBER-2	NEAT	
				250 ML AMBER-1	NEAT	
				100 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	NAOH	
				50 ML PLASTIC-1	NH_4ZSO_4	
↓	—	↓	TRIP BLANK	40 ML VOA-4	HCL	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISS)	GEN CHEM	CR 6		Air Bubbles (Y or N)
		✓							✓						
										✓		✓			
			✓												
											✓				
											✓				
						✓									
													✓		
									✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.5.15	0745			5/5/15	1200
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-15	1455		AMGallegos	05/05/14	1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505222

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB05
Project: SWMU 10
Collection Date: 5/4/2015 5:00:00 PM
Lab ID: 1505222-001
Matrix: AQUEOUS
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/8/2015 2:30:55 PM	19094
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/8/2015 2:30:55 PM	19094
Surr: DNOP	119	0	76.5-150		%REC	1	5/8/2015 2:30:55 PM	19094
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 10:32:54 PM	R26016
Surr: BFB	86.2	0	80-120		%REC	1	5/6/2015 10:32:54 PM	R26016
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/6/2015 3:35:51 PM	R26034
Chloride	ND	0.13	0.50		mg/L	1	5/6/2015 3:35:51 PM	R26034
Sulfate	ND	0.11	0.50		mg/L	1	5/6/2015 3:35:51 PM	R26034
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:45:39 PM	R26030
Cobalt	ND	0.0013	0.0060		mg/L	1	5/6/2015 6:45:39 PM	R26030
Iron	0.011	0.0073	0.020	J	mg/L	1	5/6/2015 6:45:39 PM	R26030
Manganese	0.00063	0.00027	0.0020	J	mg/L	1	5/6/2015 6:45:39 PM	R26030
Nickel	ND	0.0021	0.010		mg/L	1	5/6/2015 6:45:39 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:45:39 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:45:39 PM	R26030
Zinc	0.031	0.0028	0.010		mg/L	1	5/6/2015 6:45:39 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Chromium	ND	0.0022	0.0060		mg/L	1	5/7/2015 3:12:04 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:12:04 PM	R26052
Iron	ND	0.0073	0.020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Manganese	ND	0.0015	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Nickel	ND	0.0023	0.010		mg/L	1	5/7/2015 3:12:04 PM	R26052
Silver	ND	0.0021	0.0050		mg/L	1	5/11/2015 5:54:55 PM	R26109
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:12:04 PM	R26052
Zinc	ND	0.0036	0.010		mg/L	1	5/7/2015 3:12:04 PM	R26052
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00027	0.00014	0.0010	J	mg/L	1	5/19/2015 2:07:12 PM	R26294
Arsenic	ND	0.000065	0.0010		mg/L	1	5/19/2015 2:07:12 PM	R26294

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB05
Project: SWMU 10
Collection Date: 5/4/2015 5:00:00 PM
Lab ID: 1505222-001
Matrix: AQUEOUS
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	0.000031	0.000026	0.0010	J	mg/L	1	5/19/2015 2:07:12 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 2:07:12 PM	R26294
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00043	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
Arsenic	ND	0.00029	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
Lead	ND	0.000047	0.00050		mg/L	1	5/19/2015 1:22:44 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/14/2015 10:18:41 AM	19207
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Acenaphthylene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Aniline	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Anthracene	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Azobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzoic acid	ND	1.0	20		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzyl alcohol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Carbazole	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chloroaniline	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Chlorophenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Chrysene	ND	2.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB05
Project: SWMU 10
Collection Date: 5/4/2015 5:00:00 PM
Lab ID: 1505222-001 **Matrix:** AQUEOUS **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Diethyl phthalate	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Fluoranthene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Fluorene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachloroethane	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Isophorone	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Methylphenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Naphthalene	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Nitroaniline	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3-Nitroaniline	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Nitroaniline	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Nitrobenzene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Nitrophenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Nitrophenol	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Pentachlorophenol	ND	1.1	20		µg/L	1	5/13/2015 12:43:26 PM	19150
Phenanthrene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Phenol	ND	1.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Pyrene	ND	2.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB05
Project: SWMU 10
Collection Date: 5/4/2015 5:00:00 PM
Lab ID: 1505222-001 **Matrix:** AQUEOUS **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Surr: 2-Fluorophenol	85.1	0	14.9-111		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: Phenol-d5	76.0	0	11.3-108		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 2,4,6-Tribromophenol	100	0	15.7-154		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: Nitrobenzene-d5	99.3	0	47.8-106		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 2-Fluorobiphenyl	102	0	21.3-123		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 4-Terphenyl-d14	75.6	0	14.3-135		%REC	1	5/13/2015 12:43:26 PM	19150
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Toluene	0.34	0.11	1.0	J	µg/L	1	5/12/2015 6:09:52 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB05
Project: SWMU 10
Collection Date: 5/4/2015 5:00:00 PM
Lab ID: 1505222-001 **Matrix:** AQUEOUS **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 6:09:52 PM	R26144
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144
Surr: 4-Bromofluorobenzene	100	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB05
Project: SWMU 10
Collection Date: 5/4/2015 5:00:00 PM
Lab ID: 1505222-001
Matrix: AQUEOUS
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	99.1	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144
Surr: Toluene-d8	104	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505222-002
Matrix: TRIP BLANK
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 11:02:06 PM	R26016
Surr: BFB	92.9	0	80-120		%REC	1	5/6/2015 11:02:06 PM	R26016
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Toluene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505222-002
Matrix: TRIP BLANK
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 6:37:27 PM	R26144
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: Dibromofluoromethane	99.4	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: Toluene-d8	104	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763564-01

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505222-001H SWMU 10 EB05

Project # :

Collected By :
Collection Date : 05/04/15 17:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.014	0.0050	mg/l	4500CN E-2011	05/12/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

ESC
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12065 Lebanon Rd.
Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763564-02

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505222-001I SWMU 10 EB05

Project # :

Collected By :
Collection Date : 05/04/15 17:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L763564

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19
Cyanide	< .005	mg/l			WG788140	05/12/15 13:30

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013
Cyanide	mg/l	0.0	0.0	0.0	20	L763748-02	WG788140
Cyanide	mg/l	0.0	0.0	0.0	20	L763536-08	WG788140

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013
Cyanide	mg/l	.1	0.101	101.	90-110	WG788140

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013
Cyanide	mg/l	0.0963	0.101	96.0	90-110	4.76	20	WG788140

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013
Cyanide	mg/l	0.195	0.0	.2	98.0	90-110	L763536-09	WG788140

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013
Cyanide	mg/l	0.198	0.195	99.0	90-110	1.53	20	L763536-09	WG788140

Batch number /Run number / Sample number cross reference

WG788013: R3036316: L763564-02
WG788140: R3036440: L763564-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Sample ID **1505222-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10 EB05**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772437** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	70	130			
Beryllium	0.51	0.0020	0.5000	0	103	70	130			
Cadmium	0.53	0.0020	0.5000	0	107	70	130			
Chromium	0.50	0.0060	0.5000	0	100	70	130			
Cobalt	0.51	0.0060	0.5000	0	101	70	130			
Iron	0.53	0.020	0.5000	0	105	70	130			
Manganese	0.50	0.0020	0.5000	0	99.1	70	130			
Nickel	0.49	0.010	0.5000	0	98.6	70	130			
Vanadium	0.50	0.050	0.5000	0	99.8	70	130			
Zinc	0.50	0.010	0.5000	0	99.9	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505222-001GMSD**	SampType: **MSD**		TestCode: **EPA Method 200.7: Metals**					
Client ID:	**SWMU 10 EB05**	Batch ID: **R26052**		RunNo: **26052**					
Prep Date:		Analysis Date: **5/7/2015**		SeqNo: **772441**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.6	70	130	1.22	20	
Beryllium	0.52	0.0020	0.5000	0	103	70	130	0.311	20	
Cadmium	0.54	0.0020	0.5000	0	107	70	130	0.471	20	
Chromium	0.51	0.0060	0.5000	0	101	70	130	0.848	20	
Cobalt	0.51	0.0060	0.5000	0	101	70	130	0.0811	20	
Iron	0.52	0.020	0.5000	0	104	70	130	1.35	20	
Manganese	0.50	0.0020	0.5000	0	101	70	130	1.40	20	
Nickel	0.50	0.010	0.5000	0	99.6	70	130	0.993	20	
Vanadium	0.50	0.050	0.5000	0	101	70	130	0.777	20	
Zinc	0.50	0.010	0.5000	0	100	70	130	0.549	20	

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID: **R26109**		RunNo: **26109**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774477**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID: **R26109**		RunNo: **26109**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774478**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	103	85	115			

Sample ID	**1505222-001GMS**	SampType: **MS**		TestCode: **EPA Method 200.7: Metals**					
Client ID:	**SWMU 10 EB05**	Batch ID: **R26109**		RunNo: **26109**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774890**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	101	70	130			

Sample ID	**1505222-001GMSD**	SampType: **MSD**		TestCode: **EPA Method 200.7: Metals**					
Client ID:	**SWMU 10 EB05**	Batch ID: **R26109**		RunNo: **26109**					
Prep Date:		Analysis Date: **5/11/2015**		SeqNo: **774891**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	103	70	130	1.98	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**
Client ID:	**PBW**	Batch ID:	**R26052**	RunNo:	**26052**
Prep Date:		Analysis Date:	**5/7/2015**	SeqNo:	**772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Dissolved Metals**
Client ID:	**LCSW**	Batch ID:	**R26052**	RunNo:	**26052**
Prep Date:		Analysis Date:	**5/7/2015**	SeqNo:	**772433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Dissolved Metals**
Client ID:	**PBW**	Batch ID:	**R26109**	RunNo:	**26109**
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774479** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Dissolved Metals**
Client ID:	**LCSW**	Batch ID:	**R26109**	RunNo:	**26109**
Prep Date:		Analysis Date:	**5/11/2015**	SeqNo:	**774480** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781112**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781113**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781115**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781116**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781144**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781145**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781146**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781147**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19207**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19207**	RunNo:	**26178**				
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776900**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19207**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19207**	RunNo:	**26178**				
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776901**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R26034**	RunNo:	**26034**					
Prep Date:		Analysis Date:	**5/6/2015**	SeqNo:	**771822**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R26034**	RunNo:	**26034**					
Prep Date:		Analysis Date:	**5/6/2015**	SeqNo:	**771823**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.8	90	110			
Chloride	5.0	0.50	5.000	0	99.7	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19094**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772816** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		110	76.5	150			

Sample ID **LCS-19094**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772817** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	109	60.1	156			
Surr: DNOP	0.63		0.5000		125	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26016**	RunNo:	**26016**					
Prep Date:		Analysis Date:	**5/6/2015**	SeqNo:	**775972**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.5	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26016**	RunNo:	**26016**					
Prep Date:		Analysis Date:	**5/6/2015**	SeqNo:	**775973**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.9	80	120			
Surr: BFB	21		20.00		104	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	0.32	3.0								J
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID **100nglcs,200ngT2lc**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775656** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	98.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100nglcs,200ngT2lc**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775656** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	120	75.6	144			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	0.40	10								J
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.21	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	10		10.00		99.7	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775720** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	99.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		67.3	14.9	111			
Surr: Phenol-d5	150		200.0		73.2	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		74.7	15.7	154			
Surr: Nitrobenzene-d5	77		100.0		77.0	47.8	106			
Surr: 2-Fluorobiphenyl	81		100.0		80.8	21.3	123			
Surr: 4-Terphenyl-d14	54		100.0		54.3	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19150**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	74.2	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	80.3	58.1	103			
2-Chlorophenol	150	10	200.0	0	72.9	49.5	96.8			
1,4-Dichlorobenzene	72	10	100.0	0	71.6	40.4	89.4			
2,4-Dinitrotoluene	58	10	100.0	0	58.3	38.6	91.3			
N-Nitrosodi-n-propylamine	78	10	100.0	0	77.9	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	68.0	26.4	108			
Pentachlorophenol	130	20	200.0	0	64.7	36.5	86.6			
Phenol	150	10	200.0	0	75.0	29.3	108			
Pyrene	65	10	100.0	0	65.2	45.7	100			
1,2,4-Trichlorobenzene	89	10	100.0	0	88.8	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		78.0	14.9	111			
Surr: Phenol-d5	170		200.0		84.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.8	15.7	154			
Surr: Nitrobenzene-d5	87		100.0		86.8	47.8	106			
Surr: 2-Fluorobiphenyl	84		100.0		84.2	21.3	123			
Surr: 4-Terphenyl-d14	57		100.0		57.2	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505222 RcptNo: 1

Received by/date: AG 05/05/15

Logged By: Ashley Gallegos 5/5/2015 2:55:00 PM

Completed By: Ashley Gallegos 5/6/2015 9:35:38 AM

Reviewed By: DA 05/06/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and CNG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 1 1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? no
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks: For 300 analysis, Poured off into a 125ml bottle from the 1L Amber (unpreserved).

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

CS 05/06/15

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
(EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505222
4-15	1700	WATER	SWMU 10 EB05	40ML VOA-6	HCL	-001
				1 LITER AMBER-2	—	
				250 ML AMBER-1	—	
				100 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	HNO_3	
				500ML PLASTIC-1	NaOH	
				50ML PLASTIC-1	NH_4ZSO_4	

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR 6		Air Bubbles (Y or N)
		✓							✓						
										✓		✓			
			✓												
											✓				
											✓				
						✓									
													✓		

Date: 5.15 Time: 0745 Relinquished by:
Date: 5-15 Time: 1456 Relinquished by:

Received by: Date 5/5/15 Time 1200
Received by: Date Time
AmGallegos 05/05/15 1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, August 4, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0231

RE: SWMU 10 Order No: 1505223

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 6 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is an amended report that has updated results for hexavalent chromium.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505223**
Date: **6/29/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Hexavalent Chromium:
The original results for hexavalent chromium for the samples below did not match with the total chromium results.
SWMU 10-2 (0-2')
SWMU 10-2 (2-4')
SWMU 10 DUP03
All three of the above samples were reanalyzed and reported in this report. The reanalysis shows that the samples are nondetect for hexavalent chromium. It is our opinion that the initial analysis of the three samples above was incorrect either due to matrix interferences or laboratory error. This opinion is confirmed by both the nondetect results of the reanalyzed samples and the initial total chromium results.

ANALYTICAL SUMMARY REPORT

July 30, 2015

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B15070689

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 3 samples for Hall Environmental on 7/8/2015 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B15070689-001	1505223-003C, SWMU 10-2 (0-2 Feet)	05/04/15 15:50	07/08/15	Soil	Chromium, Hexavalent Water Extraction for Hex Chromium
B15070689-002	1505223-004C, SWMU 10-2 (2-4 Feet)	05/04/15 16:00	07/08/15	Soil	Same As Above
B15070689-003	1505223-005C, SWMU 10 DUP03	05/04/15 0:00	07/08/15	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Corporate Quality Assurance Officer

Digitally signed by
Andy Valkenburg
Date: 2015.07.30 17:54:46 -06:00

CLIENT: Hall Environmental
Project: Not Indicated
Work Order: B15070689

Report Date: 07/30/15

CASE NARRATIVE

Requested Cyanide analysis cancelled per Andy Freeman (Hall Environmental Inc) on 7/28/2015.

Level IV reporting was requested. Included with the analysis reports are instrument data reports for all analysis associated with the instrument calibration, QC sample analysis, and sample analysis. Copies of the detailed laboratory records for the analyses are sorted by method, instrument, and then analysis time. All analytical data is within method QA/QC specifications except as noted on analyses and/or QC summary reports, or in this narrative. The detailed report format with the instrument data identifies which QC batch ID and sequence QC are associated with each analysis result for a sample.

Inclusion of the raw data will be found with the attached data files. The results of this Analytical Report relate only to the items submitted for analysis. Only the raw data associated with parameters listed on this report should be validated.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505223-003C, SWMU 10-2 (0-2 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-001
Collection Date: 05/04/15 15:50
DateReceived: 07/08/15
Report Date: 07/30/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B : 4		91220

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505223-004C, SWMU 10-2 (2-4 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-002
Collection Date: 05/04/15 16:00
DateReceived: 07/08/15
Report Date: 07/30/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B : 8		91220

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505223-005C, SWMU 10 DUP03
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-003
Collection Date: 05/04/15
DateReceived: 07/08/15
Report Date: 07/30/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B : 9		91220

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: Hall Environmental
Work Order: B15070689
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 91220

Date: *30-Jul-15*

Run ID :Run Order: **SPEC_150709B: 3** SampType: **Method Blank** Lab ID: **MB-91220** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: **7/9/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	0.1									

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 5** SampType: **Sample Matrix Spike** Lab ID: **B15070689-001AMS** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.945	0.00010	1	0	94	70	130				

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 6** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B15070689-001AMSD** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.971	0.00010	1	0	97	70	130	0.9446	2.8	20	

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 7** SampType: **Sample Duplicate** Lab ID: **B15070689-001ADUP** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: **7/9/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.0920	0.00010		0				0		30	

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 12** SampType: **Laboratory Control Sample** Lab ID: **LCS-91220** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1.06	0.010	1	0	106	85	115				

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

Hall Environmental

B15070689

Login completed by: Randa Nees
Reviewed by: BL2000\raschim
Reviewed Date: 7/8/2015

Date Received: 7/8/2015
Received by: kl
Carrier name: Return-UPS NDA N/C

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☐	No ☑	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	3.2°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The samples were received past holding time for Hexavalet Chromium, continued with analysis per Chain of Custody instructions.

Cyanide requested on the Chain of Custody but is not needed per email from Andy Freeman on 07/28/15. Per Wynn Pippin, Project Manager, do not report Cyanide but charge for analysis.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: **Bil-Energy** COMPANY: **Energy Laboratories** PHONE: **(800) 735-4489** FAX: **(406) 252-6069**

ADDRESS: **1120 South 27th Street** ACCOUNT #: EMAIL:

CITY, STATE, ZIP: **Billings, MT 59107**

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1505223-003C	SWMU 10-2 (0-2')	8OZGU	MeOH (S oil)	5/4/2015 3:50:00 PM	1	TOTAL CYANIDE, CR6.LEVEL 4. B1507689-001
2	1505223-004C	SWMU 10-2 (2-4')	8OZGU	MeOH (S oil)	5/4/2015 4:00:00 PM	1	TOTAL CYANIDE, CR6.LEVEL 4. 002
3	1505223-005C	SWMU 10 DUP03	8OZGU	MeOH (S oil)	5/4/2015	1	TOTAL CYANIDE, CR6.LEVEL 4. 003

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all c

Relinquished By:	Date: 7/7/2015	Time: 3:20 PM	Received By: KYLE LARSEN	Date: 8 JUL 2015	Time: 9:15am
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard 4 RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 3.2 °C Attempt to Cool ? BLUE ICE

Comments: SHIP: UPS NDA RTN SEAL: C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505223

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 6 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 19, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 3:20:00 PM
Lab ID: 1505223-001
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.6	10		mg/Kg-dr	1	5/8/2015 6:05:15 PM	19116
Motor Oil Range Organics (MRO)	ND	51	51		mg/Kg-dr	1	5/8/2015 6:05:15 PM	19116
Surr: DNOP	100	0	57.9-140		%REC	1	5/8/2015 6:05:15 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.95	3.2		mg/Kg-dr	1	5/7/2015 10:31:17 AM	19091
Surr: BFB	93.0	0	80-120		%REC	1	5/7/2015 10:31:17 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.6	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.0055	0.0030	0.035	J	mg/Kg-dr	1	5/8/2015 4:25:42 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Arsenic	1.8	0.32	2.8	J	mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Barium	1000	0.16	0.55		mg/Kg-dr	5	5/9/2015 10:09:58 AM	19082
Beryllium	1.1	0.0082	0.17		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Chromium	9.3	0.067	0.33		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Cobalt	4.8	0.042	0.33		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Iron	15000	67	280		mg/Kg-dr	100	5/8/2015 1:23:07 PM	19082
Lead	2.5	0.12	0.28		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Manganese	410	0.13	0.22		mg/Kg-dr	2	5/8/2015 3:11:10 PM	19082
Nickel	8.2	0.14	0.55		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Vanadium	21	0.037	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Zinc	14	0.71	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 3:20:00 PM
Lab ID: 1505223-001
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3,3´-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157

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CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 3:20:00 PM
Lab ID: 1505223-001
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Surr: 2-Fluorophenol	69.4		26.4-129		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: Phenol-d5	71.4		34.8-118		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 2,4,6-Tribromophenol	72.8		26.8-128		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: Nitrobenzene-d5	68.8		35.8-124		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 2-Fluorobiphenyl	70.7		24.5-139		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 4-Terphenyl-d14	66.2		29.4-129		%REC	1	5/13/2015 6:48:16 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00387	0.000467	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Toluene	0.00275	0.000216	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Ethylbenzene	0.000767	0.000349	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Xylenes, Total	0.00220	0.00124	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000869	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,4-Trimethylbenzene	0.00106	0.000542	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3,5-Trimethylbenzene	0.000477	0.000364	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000556	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000248	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Naphthalene	ND	0.000678	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1-Methylnaphthalene	ND	0.000814	0.00415		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107

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CLIENT: Western Refining Company
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Project: SWMU 10
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Lab ID: 1505223-001
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000810	0.00415		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Acetone	0.00854	0.00129	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromobenzene	ND	0.000577	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromodichloromethane	ND	0.000280	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromoform	ND	0.000537	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromomethane	ND	0.00123	0.00311		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Butanone	0.00176	0.000664	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Carbon tetrachloride	ND	0.000375	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chlorobenzene	ND	0.000210	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloroform	ND	0.000427	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloromethane	ND	0.000244	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Chlorotoluene	ND	0.000405	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Carbon disulfide	ND	0.000938	0.0104		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
4-Chlorotoluene	ND	0.000399	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
cis-1,2-DCE	ND	0.000548	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
cis-1,3-Dichloropropene	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000609	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dibromochloromethane	ND	0.000233	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dibromomethane	ND	0.00118	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichlorobenzene	ND	0.000460	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3-Dichlorobenzene	ND	0.000351	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,4-Dichlorobenzene	ND	0.000325	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dichlorodifluoromethane	ND	0.000847	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloroethane	ND	0.000484	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloroethene	ND	0.000346	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichloropropane	ND	0.000443	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3-Dichloropropane	ND	0.000323	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2,2-Dichloropropane	ND	0.000360	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloropropene	ND	0.000380	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Hexachlorobutadiene	ND	0.000418	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Isopropylbenzene	ND	0.000481	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
4-Isopropyltoluene	ND	0.000805	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Methylene chloride	0.000695	0.000512	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
n-Butylbenzene	ND	0.000851	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Hexanone	0.000726	0.000431	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
n-Propylbenzene	ND	0.000388	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
sec-Butylbenzene	0.000695	0.000524	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Styrene	ND	0.000344	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107

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CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 3:20:00 PM
Lab ID: 1505223-001
Matrix: MEOH (SOIL)
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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000876	0.0104		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
tert-Butylbenzene	ND	0.000318	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000337	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000456	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Tetrachloroethene (PCE)	ND	0.000411	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
trans-1,2-DCE	ND	0.000335	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
trans-1,3-Dichloropropene	ND	0.000271	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,3-Trichlorobenzene	ND	0.000759	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,4-Trichlorobenzene	ND	0.000777	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,1-Trichloroethane	ND	0.000295	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,2-Trichloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Trichloroethene (TCE)	ND	0.000412	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Trichlorofluoromethane	ND	0.000419	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,3-Trichloropropane	ND	0.000728	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Vinyl chloride	ND	0.000237	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: Dibromofluoromethane	106	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (10-12')
Project: SWMU 10
Collection Date: 5/4/2015 3:30:00 PM
Lab ID: 1505223-002
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.3	9.6		mg/Kg-dr	1	5/8/2015 7:09:05 PM	19116
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/8/2015 7:09:05 PM	19116
Surr: DNOP	104	0	57.9-140		%REC	1	5/8/2015 7:09:05 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	4.1		mg/Kg-dr	1	5/7/2015 11:00:01 AM	19091
Surr: BFB	91.5	0	80-120		%REC	1	5/7/2015 11:00:01 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0035	0.039		mg/Kg-dr	1	5/8/2015 4:29:24 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.9	1.6	3.0	J	mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Barium	550	0.071	0.24		mg/Kg-dr	2	5/8/2015 3:14:46 PM	19082
Beryllium	1.0	0.0088	0.18		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Chromium	14	0.071	0.36		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Cobalt	8.0	0.045	0.36		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Iron	20000	72	300		mg/Kg-dr	100	5/8/2015 1:24:38 PM	19082
Lead	1.6	0.13	0.30		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Manganese	760	0.35	0.59		mg/Kg-dr	5	5/9/2015 10:13:19 AM	19082
Nickel	16	0.15	0.59		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Silver	ND	0.035	0.30		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Vanadium	14	0.040	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Zinc	23	0.77	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (10-12')
Project: SWMU 10
Collection Date: 5/4/2015 3:30:00 PM
Lab ID: 1505223-002
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3,3´-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (10-12')
Project: SWMU 10
Collection Date: 5/4/2015 3:30:00 PM
Lab ID: 1505223-002
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Surr: 2-Fluorophenol	82.0		26.4-129		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: Phenol-d5	78.7		34.8-118		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 2,4,6-Tribromophenol	83.5		26.8-128		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: Nitrobenzene-d5	80.2		35.8-124		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 2-Fluorobiphenyl	78.9		24.5-139		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 4-Terphenyl-d14	72.7		29.4-129		%REC	1	5/13/2015 7:16:13 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0226	0.000564	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Toluene	0.0146	0.000260	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Ethylbenzene	0.00350	0.000420	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Xylenes, Total	0.0116	0.00149	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.00105	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,4-Trimethylbenzene	0.00363	0.000654	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3,5-Trimethylbenzene	0.00220	0.000439	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000670	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000299	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Naphthalene	0.00103	0.000817	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1-Methylnaphthalene	ND	0.000982	0.00500		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107

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Qualifiers:

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CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (10-12')
Project: SWMU 10
Collection Date: 5/4/2015 3:30:00 PM
Lab ID: 1505223-002
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000977	0.00500		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Acetone	0.00589	0.00156	0.0125	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromobenzene	ND	0.000696	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromodichloromethane	ND	0.000338	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromoform	ND	0.000648	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromomethane	ND	0.00148	0.00375		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Butanone	ND	0.000801	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Carbon tetrachloride	ND	0.000453	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chlorobenzene	ND	0.000254	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloroethane	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloroform	ND	0.000515	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloromethane	ND	0.000295	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Chlorotoluene	ND	0.000488	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Carbon disulfide	ND	0.00113	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
4-Chlorotoluene	ND	0.000482	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
cis-1,2-DCE	ND	0.000661	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
cis-1,3-Dichloropropene	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000735	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dibromochloromethane	ND	0.000281	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dibromomethane	ND	0.00142	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichlorobenzene	ND	0.000555	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3-Dichlorobenzene	ND	0.000424	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,4-Dichlorobenzene	ND	0.000393	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dichlorodifluoromethane	ND	0.00102	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloroethane	ND	0.000584	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloroethene	ND	0.000417	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichloropropane	ND	0.000534	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3-Dichloropropane	ND	0.000390	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2,2-Dichloropropane	ND	0.000434	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloropropene	ND	0.000458	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Hexachlorobutadiene	ND	0.000505	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Isopropylbenzene	ND	0.000580	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
4-Isopropyltoluene	ND	0.000971	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Methylene chloride	ND	0.000618	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
n-Butylbenzene	ND	0.00103	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Hexanone	ND	0.000520	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
n-Propylbenzene	0.000638	0.000468	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
sec-Butylbenzene	0.000925	0.000632	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Styrene	ND	0.000414	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-6 (10-12')
Project: SWMU 10
Collection Date: 5/4/2015 3:30:00 PM
Lab ID: 1505223-002
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.00106	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
tert-Butylbenzene	ND	0.000383	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000407	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000550	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Tetrachloroethene (PCE)	ND	0.000496	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
trans-1,2-DCE	ND	0.000404	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
trans-1,3-Dichloropropene	ND	0.000327	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,3-Trichlorobenzene	ND	0.000915	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,4-Trichlorobenzene	ND	0.000937	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,1-Trichloroethane	ND	0.000356	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,2-Trichloroethane	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Trichloroethene (TCE)	ND	0.000497	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Trichlorofluoromethane	ND	0.000505	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,3-Trichloropropane	ND	0.000878	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Vinyl chloride	ND	0.000286	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Surr: 1,2-Dichloroethane-d4	91.6	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: 4-Bromofluorobenzene	94.9	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: Dibromofluoromethane	94.1	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: Toluene-d8	85.9	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (0-2')
Project: SWMU 10
Collection Date: 5/4/2015 3:50:00 PM
Lab ID: 1505223-003
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	24	5.4	9.7		mg/Kg-dr	1	5/8/2015 7:30:14 PM	19116
Motor Oil Range Organics (MRO)	58	49	49		mg/Kg-dr	1	5/8/2015 7:30:14 PM	19116
Surr: DNOP	106	0	57.9-140		%REC	1	5/8/2015 7:30:14 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.99	3.3		mg/Kg-dr	1	5/7/2015 11:28:43 AM	19091
Surr: BFB	91.6	0	80-120		%REC	1	5/7/2015 11:28:43 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.014	0.0034	0.039	J	mg/Kg-dr	1	5/8/2015 4:40:22 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Arsenic	1.8	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Barium	390	0.070	0.23		mg/Kg-dr	2	5/8/2015 3:18:28 PM	19082
Beryllium	0.91	0.0086	0.17		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Cobalt	4.6	0.044	0.35		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Iron	15000	70	290		mg/Kg-dr	100	5/8/2015 1:40:49 PM	19082
Lead	3.1	0.13	0.29		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Manganese	700	0.34	0.58		mg/Kg-dr	5	5/9/2015 10:20:59 AM	19082
Nickel	9.2	0.15	0.58		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Vanadium	21	0.039	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Zinc	18	0.75	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (0-2')
Project: SWMU 10
Collection Date: 5/4/2015 3:50:00 PM
Lab ID: 1505223-003
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3,3´-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (0-2')
Project: SWMU 10
Collection Date: 5/4/2015 3:50:00 PM
Lab ID: 1505223-003
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Surr: 2-Fluorophenol	77.9		26.4-129		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: Phenol-d5	78.0		34.8-118		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 2,4,6-Tribromophenol	86.8		26.8-128		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: Nitrobenzene-d5	78.9		35.8-124		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 2-Fluorobiphenyl	79.4		24.5-139		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 4-Terphenyl-d14	67.8		29.4-129		%REC	1	5/13/2015 7:44:14 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00171	0.000450	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Toluene	0.00191	0.000208	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Ethylbenzene	0.000618	0.000335	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Xylenes, Total	0.00206	0.00119	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000837	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,4-Trimethylbenzene	0.000938	0.000521	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3,5-Trimethylbenzene	ND	0.000350	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000535	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000239	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Naphthalene	ND	0.000652	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1-Methylnaphthalene	ND	0.000784	0.00399		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (0-2')
Project: SWMU 10
Collection Date: 5/4/2015 3:50:00 PM
Lab ID: 1505223-003
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000780	0.00399		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Acetone	0.0222	0.00125	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromobenzene	ND	0.000555	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromodichloromethane	ND	0.000270	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromoform	ND	0.000517	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromomethane	ND	0.00118	0.00299		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Butanone	0.00380	0.000639	0.00998	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Carbon tetrachloride	ND	0.000361	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chlorobenzene	ND	0.000202	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloroethane	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloroform	ND	0.000411	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloromethane	ND	0.000235	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Chlorotoluene	ND	0.000389	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Carbon disulfide	ND	0.000903	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
4-Chlorotoluene	ND	0.000384	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
cis-1,2-DCE	ND	0.000528	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
cis-1,3-Dichloropropene	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000586	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dibromochloromethane	ND	0.000224	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dibromomethane	ND	0.00113	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichlorobenzene	ND	0.000443	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3-Dichlorobenzene	ND	0.000338	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,4-Dichlorobenzene	ND	0.000313	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dichlorodifluoromethane	ND	0.000815	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloroethane	ND	0.000466	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloroethene	ND	0.000333	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichloropropane	ND	0.000426	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3-Dichloropropane	ND	0.000311	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2,2-Dichloropropane	ND	0.000347	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloropropene	ND	0.000365	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Hexachlorobutadiene	ND	0.000403	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Isopropylbenzene	ND	0.000463	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
4-Isopropyltoluene	ND	0.000774	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Methylene chloride	0.000748	0.000493	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
n-Butylbenzene	ND	0.000819	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Hexanone	0.000788	0.000415	0.00998	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
n-Propylbenzene	ND	0.000374	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
sec-Butylbenzene	0.000658	0.000504	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Styrene	ND	0.000331	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (0-2')
Project: SWMU 10
Collection Date: 5/4/2015 3:50:00 PM
Lab ID: 1505223-003
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000843	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
tert-Butylbenzene	ND	0.000306	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000325	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000439	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Tetrachloroethene (PCE)	ND	0.000395	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
trans-1,2-DCE	ND	0.000322	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
trans-1,3-Dichloropropene	ND	0.000261	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,3-Trichlorobenzene	ND	0.000730	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,4-Trichlorobenzene	ND	0.000748	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,1-Trichloroethane	ND	0.000284	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,2-Trichloroethane	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Trichloroethene (TCE)	ND	0.000396	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Trichlorofluoromethane	ND	0.000403	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,3-Trichloropropane	ND	0.000701	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Vinyl chloride	ND	0.000228	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: Dibromofluoromethane	96.0	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: Toluene-d8	96.6	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 4:00:00 PM
Lab ID: 1505223-004
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/8/2015 8:34:07 PM	19116
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/8/2015 8:34:07 PM	19116
Surr: DNOP	101	0	57.9-140		%REC	1	5/8/2015 8:34:07 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.97	3.2		mg/Kg-dr	1	5/7/2015 11:57:30 AM	19091
Surr: BFB	92.4	0	80-120		%REC	1	5/7/2015 11:57:30 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.0062	0.0034	0.039	J	mg/Kg-dr	1	5/8/2015 4:36:41 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.7	1.5	2.9	J	mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Arsenic	1.7	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Barium	810	0.17	0.57		mg/Kg-dr	5	5/9/2015 10:22:14 AM	19082
Beryllium	0.98	0.0085	0.17		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Chromium	11	0.069	0.34		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Cobalt	5.1	0.043	0.34		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Iron	17000	69	290		mg/Kg-dr	100	5/8/2015 1:42:19 PM	19082
Lead	2.3	0.12	0.29		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Manganese	360	0.13	0.23		mg/Kg-dr	2	5/8/2015 3:26:54 PM	19082
Nickel	8.9	0.15	0.57		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Vanadium	22	0.038	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Zinc	17	0.74	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 4:00:00 PM
Lab ID: 1505223-004
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.065	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3,3´-Dichlorobenzidine	ND	0.088	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 4:00:00 PM
Lab ID: 1505223-004
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Surr: 2-Fluorophenol	61.5		26.4-129		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: Phenol-d5	63.1		34.8-118		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 2,4,6-Tribromophenol	65.7		26.8-128		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: Nitrobenzene-d5	57.0		35.8-124		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 2-Fluorobiphenyl	64.3		24.5-139		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 4-Terphenyl-d14	63.1		29.4-129		%REC	1	5/13/2015 8:12:17 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00203	0.000383	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Toluene	0.00155	0.000177	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Ethylbenzene	0.000468	0.000286	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Xylenes, Total	0.00143	0.00101	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Methyl tert-butyl ether (MTBE)	0.00283	0.000713	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,4-Trimethylbenzene	0.000663	0.000444	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3,5-Trimethylbenzene	ND	0.000298	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000456	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000203	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Naphthalene	ND	0.000556	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1-Methylnaphthalene	ND	0.000668	0.00340		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 4:00:00 PM
Lab ID: 1505223-004
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000665	0.00340		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Acetone	0.0199	0.00106	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromobenzene	ND	0.000473	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromodichloromethane	ND	0.000230	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromoform	ND	0.000441	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromomethane	ND	0.00101	0.00255		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Butanone	0.00283	0.000545	0.00850	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Carbon tetrachloride	ND	0.000308	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chlorobenzene	ND	0.000172	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloroethane	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloroform	ND	0.000350	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloromethane	ND	0.000200	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Chlorotoluene	ND	0.000332	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Carbon disulfide	ND	0.000770	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
4-Chlorotoluene	ND	0.000328	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
cis-1,2-DCE	ND	0.000450	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
cis-1,3-Dichloropropene	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000500	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dibromochloromethane	ND	0.000191	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dibromomethane	ND	0.000965	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichlorobenzene	ND	0.000377	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3-Dichlorobenzene	ND	0.000288	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,4-Dichlorobenzene	ND	0.000267	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dichlorodifluoromethane	ND	0.000694	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloroethane	ND	0.000397	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloroethene	ND	0.000284	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichloropropane	ND	0.000363	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3-Dichloropropane	ND	0.000265	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2,2-Dichloropropane	ND	0.000295	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloropropene	ND	0.000311	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Hexachlorobutadiene	ND	0.000343	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Isopropylbenzene	ND	0.000395	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
4-Isopropyltoluene	ND	0.000660	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Methylene chloride	ND	0.000420	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
n-Butylbenzene	ND	0.000698	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Hexanone	0.000672	0.000354	0.00850	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
n-Propylbenzene	ND	0.000318	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
sec-Butylbenzene	ND	0.000430	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Styrene	ND	0.000282	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-2 (2-4')
Project: SWMU 10
Collection Date: 5/4/2015 4:00:00 PM
Lab ID: 1505223-004
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000718	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
tert-Butylbenzene	ND	0.000261	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000277	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000374	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Tetrachloroethene (PCE)	ND	0.000337	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
trans-1,2-DCE	ND	0.000275	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
trans-1,3-Dichloropropene	ND	0.000222	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,3-Trichlorobenzene	ND	0.000622	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,4-Trichlorobenzene	ND	0.000637	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,1-Trichloroethane	ND	0.000242	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,2-Trichloroethane	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Trichloroethene (TCE)	ND	0.000338	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Trichlorofluoromethane	ND	0.000344	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,3-Trichloropropane	ND	0.000597	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Vinyl chloride	ND	0.000194	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Surr: 1,2-Dichloroethane-d4	95.0	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: Dibromofluoromethane	96.6	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: Toluene-d8	87.1	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP03
Project: SWMU 10
Collection Date: 5/4/2015
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/8/2015 8:55:21 PM	19116
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/8/2015 8:55:21 PM	19116
Surr: DNOP	112	0	57.9-140		%REC	1	5/8/2015 8:55:21 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	3.9		mg/Kg-dr	1	5/7/2015 12:26:14 PM	19091
Surr: BFB	92.3	0	80-120		%REC	1	5/7/2015 12:26:14 PM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.4	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/8/2015 4:38:31 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.9	1.5	2.8	J	mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Arsenic	2.2	0.32	2.8	J	mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Barium	450	0.066	0.22		mg/Kg-dr	2	5/8/2015 3:30:42 PM	19082
Beryllium	0.95	0.0082	0.17		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Chromium	13	0.066	0.33		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Cobalt	7.0	0.042	0.33		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Iron	20000	67	280		mg/Kg-dr	100	5/8/2015 1:43:51 PM	19082
Lead	1.4	0.12	0.28		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Manganese	730	0.32	0.55		mg/Kg-dr	5	5/9/2015 10:23:28 AM	19082
Nickel	13	0.14	0.55		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Vanadium	17	0.037	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Zinc	21	0.71	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP03
Project: SWMU 10
Collection Date: 5/4/2015
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3,3´-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP03
Project: SWMU 10
Collection Date: 5/4/2015
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Surr: 2-Fluorophenol	78.7		26.4-129		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: Phenol-d5	75.1		34.8-118		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 2,4,6-Tribromophenol	74.0		26.8-128		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: Nitrobenzene-d5	72.7		35.8-124		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 2-Fluorobiphenyl	78.9		24.5-139		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 4-Terphenyl-d14	65.6		29.4-129		%REC	1	5/13/2015 8:40:20 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0206	0.000524	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Toluene	0.0139	0.000242	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Ethylbenzene	0.00328	0.000391	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Xylenes, Total	0.00984	0.00139	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000975	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,4-Trimethylbenzene	0.00292	0.000608	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3,5-Trimethylbenzene	0.00172	0.000408	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000623	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000278	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Naphthalene	0.000837	0.000760	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1-Methylnaphthalene	ND	0.000913	0.00465		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP03
Project: SWMU 10
Collection Date: 5/4/2015
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000909	0.00465		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Acetone	0.00256	0.00145	0.0116	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromobenzene	ND	0.000647	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromodichloromethane	ND	0.000314	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromoform	ND	0.000603	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromomethane	ND	0.00137	0.00349		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Butanone	ND	0.000745	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Carbon tetrachloride	ND	0.000421	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chlorobenzene	ND	0.000236	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloroethane	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloroform	ND	0.000479	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloromethane	ND	0.000274	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Chlorotoluene	ND	0.000454	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Carbon disulfide	ND	0.00105	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
4-Chlorotoluene	ND	0.000448	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
cis-1,2-DCE	ND	0.000615	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
cis-1,3-Dichloropropene	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000683	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dibromochloromethane	ND	0.000261	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dibromomethane	ND	0.00132	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichlorobenzene	ND	0.000516	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3-Dichlorobenzene	ND	0.000394	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,4-Dichlorobenzene	ND	0.000365	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dichlorodifluoromethane	ND	0.000949	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloroethane	ND	0.000543	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloroethene	ND	0.000388	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichloropropane	ND	0.000497	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3-Dichloropropane	ND	0.000362	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2,2-Dichloropropane	ND	0.000404	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloropropene	ND	0.000426	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Hexachlorobutadiene	ND	0.000469	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Isopropylbenzene	ND	0.000539	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
4-Isopropyltoluene	ND	0.000902	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Methylene chloride	0.000721	0.000575	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
n-Butylbenzene	ND	0.000955	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Hexanone	ND	0.000484	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
n-Propylbenzene	0.000477	0.000435	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
sec-Butylbenzene	0.000849	0.000587	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Styrene	ND	0.000385	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP03
Project: SWMU 10
Collection Date: 5/4/2015
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000982	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
tert-Butylbenzene	ND	0.000356	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000378	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000511	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Tetrachloroethene (PCE)	ND	0.000461	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
trans-1,2-DCE	ND	0.000376	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
trans-1,3-Dichloropropene	ND	0.000304	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,3-Trichlorobenzene	ND	0.000851	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,4-Trichlorobenzene	ND	0.000871	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,1-Trichloroethane	ND	0.000331	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,2-Trichloroethane	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Trichloroethene (TCE)	ND	0.000462	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Trichlorofluoromethane	ND	0.000470	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,3-Trichloropropane	ND	0.000816	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Vinyl chloride	ND	0.000266	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: 4-Bromofluorobenzene	98.8	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: Dibromofluoromethane	103	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: Toluene-d8	95.3	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MEOH BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505223-006
Matrix: MEOH BLAN
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.5	5.0		mg/Kg	1	5/7/2015 1:23:46 PM	19091
Surr: BFB	94.3	0	80-120		%REC	1	5/7/2015 1:23:46 PM	19091
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0074	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Toluene	ND	0.0060	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Ethylbenzene	ND	0.0046	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Methyl tert-butyl ether (MTBE)	ND	0.0071	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,4-Trimethylbenzene	ND	0.0025	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3,5-Trimethylbenzene	ND	0.0033	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dichloroethane (EDC)	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dibromoethane (EDB)	ND	0.0040	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Naphthalene	ND	0.012	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1-Methylnaphthalene	ND	0.030	0.20		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Methylnaphthalene	ND	0.033	0.20		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Acetone	0.095	0.037	0.75	J	mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromobenzene	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromodichloromethane	ND	0.0041	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromoform	ND	0.0040	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromomethane	0.016	0.0097	0.15	J	mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Butanone	ND	0.032	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Carbon disulfide	ND	0.036	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Carbon tetrachloride	ND	0.0049	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chlorobenzene	ND	0.0038	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloroethane	ND	0.039	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloroform	ND	0.0052	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloromethane	ND	0.0058	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Chlorotoluene	ND	0.0057	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Chlorotoluene	ND	0.0038	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,2-DCE	ND	0.0063	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,3-Dichloropropene	ND	0.0035	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dibromo-3-chloropropane	ND	0.0086	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dibromochloromethane	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dibromomethane	ND	0.0053	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dichlorobenzene	ND	0.0030	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3-Dichlorobenzene	ND	0.0059	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dichlorodifluoromethane	ND	0.013	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloroethane	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloroethene	ND	0.0034	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MEOH BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505223-006
Matrix: MEOH BLAN
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,2-Dichloropropane	ND	0.0028	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3-Dichloropropane	ND	0.0069	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2,2-Dichloropropane	ND	0.0073	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloropropene	ND	0.0074	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Hexachlorobutadiene	ND	0.0069	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Hexanone	ND	0.012	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Isopropylbenzene	ND	0.0042	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Isopropyltoluene	ND	0.0036	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Methyl-2-pentanone	ND	0.0087	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Methylene chloride	ND	0.020	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
n-Butylbenzene	ND	0.0043	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
n-Propylbenzene	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
sec-Butylbenzene	ND	0.0071	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Styrene	ND	0.0092	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
tert-Butylbenzene	ND	0.0057	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,1,2-Tetrachloroethane	ND	0.0041	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,2,2-Tetrachloroethane	ND	0.0061	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Tetrachloroethene (PCE)	ND	0.0043	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
trans-1,2-DCE	ND	0.0032	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
trans-1,3-Dichloropropene	ND	0.0090	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,3-Trichlorobenzene	ND	0.011	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,4-Trichlorobenzene	ND	0.0092	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,1-Trichloroethane	ND	0.0076	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,2-Trichloroethane	ND	0.0060	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Trichloroethene (TCE)	ND	0.0049	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Trichlorofluoromethane	ND	0.015	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Vinyl chloride	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Xylenes, Total	ND	0.014	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Surr: Dibromofluoromethane	99.5		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: 1,2-Dichloroethane-d4	87.3		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: Toluene-d8	92.4		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: 4-Bromofluorobenzene	96.9		70-130		%REC	1	5/8/2015 11:52:26 PM	19119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-01

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-001C SWMU 10-6 2-4FT

Project # :

Collected By :
Collection Date : 05/04/15 15:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	40.		mV	2580 B-2011	05/12/15	1
pH	7.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-01 (PH) - 7.6 a 20.4c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-02

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-002C SWMU 10-6 10-12FT

Project # :

Collected By :
Collection Date : 05/04/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-02 (PH) - 8.6 at 20.4c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-03

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-003C SWMU 10-2 0-2FT

Project # :

Collected By :
Collection Date : 05/04/15 15:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	270	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-20.		mV	2580 B-2011	05/12/15	1
pH	7.8	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-03 (PH) - 7.8 at 20.4c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-04

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-004C SWMU 10-2 2-4FT

Project # :

Collected By :
Collection Date : 05/04/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	260	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.2	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-04 (PH) - 8.2 at 20.1c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-05

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-005C SWMU 10 DUP03

Project # :

Collected By :
Collection Date : 05/04/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	260	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.4	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-05 (PH) - 8.4 at 20.5c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

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Quality Assurance Report
Level II

L763578

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787747	05/12/15 05:36
Cyanide	< .25	mg/kg			WG787856	05/12/15 12:46

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	6.60	6.70	0.749	1	L763514-01	WG787615
pH	su	7.40	7.40	0.542	1	L763739-08	WG787615
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L763354-01	WG787747
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856
ORP	mV	22.0	20.0	9.52	20	L763853-01	WG788141

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787615
Chromium,Hexavalent	mg/kg	59.8	52.0	87.0	80-120	WG787747
Cyanide	mg/kg	101	108.	107.	50-150	WG787856
ORP	mV	100	109.	109.	90-110	WG788141

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787615
Chromium,Hexavalent	mg/kg	52.2	52.0	87.0	80-120	0.384	20	WG787747
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856
ORP	mV	110.	109.	110.	90-110	0.913	20	WG788141

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.9	0.0	20	100.	75-125	L763354-01	WG787747
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

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Quality Assurance Report
Level II

L763578

May 12, 2015

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.5	20.9	102.	75-125	1.93	20	L763354-01	WG787747
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787615: R3035880: L763578-01 02 03 04 05
WG787747: R3036267: L763578-01 02 03 04 05
WG787856: R3036409: L763578-01 02 03 04 05
WG788141: R3036493: L763578-01 02 03 04 05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19116**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19116**	RunNo: **26059**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **773936** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	57.9	140			

Sample ID **LCS-19116**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19116**	RunNo: **26059**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **773937** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.7	67.8	130			
Surr: DNOP	6.1		5.000		123	57.9	140			

Sample ID **1505223-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-6 (2-4')**	Batch ID: **19116**	RunNo: **26059**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **773939** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.30	0	92.2	42.3	146			
Surr: DNOP	5.9		5.030		118	57.9	140			

Sample ID **1505223-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-6 (2-4')**	Batch ID: **19116**	RunNo: **26059**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **773940** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.35	0	88.3	42.3	146	4.24	28.9	
Surr: DNOP	5.7		5.035		113	57.9	140	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19091**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **19091**	RunNo: **26045**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772072** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.4	80	120			

Sample ID **LCS-19091**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **19091**	RunNo: **26045**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772073** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	64	130			
Surr: BFB	1000		1000		100	80	120			

Sample ID **MB-19119**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **19119**	RunNo: **26061**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **773617** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.8	80	120			

Sample ID **LCS-19119**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **19119**	RunNo: **26061**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **773618** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		98.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19119**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19119**	RunNo: **26064**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **772830** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0072	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.041	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.011	0.15								J
2-Butanone	0.036	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0068	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19119**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19119**	RunNo: **26064**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **772830** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	0.0070	0.15								J
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	0.011	0.10								J
1,2,4-Trichlorobenzene	0.013	0.050								J
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	0.0067	0.050								J
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.43		0.5000		85.5	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.4	70	130			

Sample ID **lcs-19119**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19119**	RunNo: **26064**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **772831** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	102	70	130			
Toluene	0.90	0.050	1.000	0	89.9	70	130			
Chlorobenzene	1.0	0.050	1.000	0	103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcs-19119**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: Volatiles**
Client ID:	**LCSS**	Batch ID:	**19119**	RunNo:	**26064**
Prep Date:	**5/7/2015**	Analysis Date:	**5/8/2015**	SeqNo:	**772831** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	124	60.6	134			
Trichloroethene (TCE)	0.91	0.050	1.000	0	91.3	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.5	70	130			
Surr: Toluene-d8	0.44		0.5000		87.4	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19107**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Sample ID **1505223-001Ams**	SampType: **MS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **SWMU 10-6 (2-4')**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771941** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0118	0.00219	0.01097	0.003867	72.7	33.4	127			
Toluene	0.0112	0.00219	0.01097	0.002747	76.9	24.8	130			
Chlorobenzene	0.0103	0.00219	0.01097	0	94.3	25.8	132			
1,1-Dichloroethene	0.0138	0.00219	0.01097	0	126	70	130			
Trichloroethene (TCE)	0.0122	0.00219	0.01097	0	111	70	130			
Surr: 1,2-Dichloroethane-d4	0.0255		0.02742		93.0	70	130			
Surr: 4-Bromofluorobenzene	0.0259		0.02742		94.3	70	130			
Surr: Dibromofluoromethane	0.0279		0.02742		102	70	130			
Surr: Toluene-d8	0.0245		0.02742		89.5	70	130			

Sample ID **1505223-001Amsd**	SampType: **MSD**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **SWMU 10-6 (2-4')**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **772064** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0125	0.00219	0.01093	0.003867	79.2	33.4	127	5.53	20	
Toluene	0.0113	0.00219	0.01093	0.002747	78.4	24.8	130	1.16	20	
Chlorobenzene	0.0103	0.00219	0.01093	0	94.0	25.8	132	0.715	20	
1,1-Dichloroethene	0.0133	0.00219	0.01093	0	122	70	130	3.22	20	
Trichloroethene (TCE)	0.0121	0.00219	0.01093	0	110	70	130	1.03	20	
Surr: 1,2-Dichloroethane-d4	0.0266		0.02732		97.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0248		0.02732		90.8	70	130	0	0	
Surr: Dibromofluoromethane	0.0284		0.02732		104	70	130	0	0	
Surr: Toluene-d8	0.0267		0.02732		97.9	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**
12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19157**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19112**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID:	**19112**	RunNo:	**26073**				
Prep Date:	**5/7/2015**	Analysis Date:	**5/8/2015**	SeqNo:	**773113**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19112**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID:	**19112**	RunNo:	**26073**				
Prep Date:	**5/7/2015**	Analysis Date:	**5/8/2015**	SeqNo:	**773114**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	98.3	80	120			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19082**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19082**	RunNo: **26074**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **773158** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	0.028	0.10								J
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.75	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-19082**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19082**	RunNo: **26074**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **773159** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	101	80	120			
Arsenic	26	2.5	25.00	0	103	80	120			
Barium	25	0.10	25.00	0	98.4	80	120			
Beryllium	26	0.15	25.00	0	104	80	120			
Cadmium	25	0.10	25.00	0	99.3	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Cobalt	24	0.30	25.00	0	97.3	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	25	0.25	25.00	0	99.6	80	120			
Manganese	25	0.10	25.00	0	99.4	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	100	80	120			
Silver	5.3	0.25	5.000	0	106	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505223 RcptNo: 1

Received by/date: 05/05/15

Logged By: **Ashley Gallegos** 5/5/2015 2:55:00 PM

Completed By: **Ashley Gallegos** 5/6/2015 9:49:27 AM

Reviewed By: 05/06/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505223	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals and Cyanide (See attached sheet)			Air Bubbles (Y or N)
5.4.15	1520	SOIL	SWMU 10-6(2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOB1											✓					
	1530		SWMU 10-6(10-12')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOB1											✓					
	1550		SWMU 10-2 (0-2')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOB1											✓					
	1600		SWMU 10-2 (2-4')	JARS-2	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOB1											✓					

Date: 5.5.15 Time: 0745 Relinquished by:
Received by: Date 5/5/15 Time 1200
Date: 5-5-15 Time: 1455 Relinquished by:
Received by: AM Gallegos Date 05/05/15 Time 1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC, GALLUP REFINERY

Mailing Address: 92 #GIANT CROSSING RD GALLUP, NM 87301

Phone #: 505-722-0231

email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other

☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: SWMU 10

Project #:

Project Manager: CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505223	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals and Cyanide (See attached sheet)			Air Bubbles (Y or N)
5.4.15	—	SOIL	SWMU 10 DUP03	2 JARS	NEAT	-005			✓						·	✓	✓	✓			
	—			2 VIALS	MeOH											✓					
	—	↓	↓	2 VIALS	SOB1											✓					
↓	—	—	MeOH Blank	2 VIALS	MeOH	-006										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
5.5.15	0745			5/5/15	12.00	
5.5.15	1455		A.M. Gallegos	05/05/15	1455	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 27, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505570

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/12/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 19, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505570**
Date: **10/27/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 10:00:00 AM
Lab ID: 1505570-001 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	1200	61	110		mg/Kg-dr	10	5/14/2015 3:41:49 PM	19200
Motor Oil Range Organics (MRO)	ND	550	550		mg/Kg-dr	10	5/14/2015 3:41:49 PM	19200
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/14/2015 3:41:49 PM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0046	0.0030	0.034	J	mg/Kg-dr	1	5/29/2015 12:37:30 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	5.8		mg/Kg-dr	2	5/16/2015 4:12:10 PM	19259
Arsenic	0.87	0.34	2.9	J	mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Barium	160	0.035	0.12		mg/Kg-dr	1	5/16/2015 4:42:40 PM	19259
Beryllium	0.78	0.0086	0.17		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Chromium	7.0	0.070	0.35		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Cobalt	4.5	0.044	0.35		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Iron	11000	70	290		mg/Kg-dr	100	5/16/2015 3:44:23 PM	19259
Lead	3.6	0.13	0.29		mg/Kg-dr	1	5/16/2015 4:42:40 PM	19259
Manganese	430	0.14	0.23		mg/Kg-dr	2	5/16/2015 4:12:10 PM	19259
Nickel	7.1	0.15	0.58		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Vanadium	13	0.039	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Zinc	14	0.75	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Aniline	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzyl alcohol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 10:00:00 AM
Lab ID: 1505570-001 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.086	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
3,3´-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Fluorene	0.20	0.15	0.22	J	mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 10:00:00 AM
Lab ID: 1505570-001
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Nitrophenol	ND	0.097	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Surr: 2-Fluorophenol	59.5		26.4-129		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: Phenol-d5	69.1		34.8-118		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 2,4,6-Tribromophenol	48.3		26.8-128		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: Nitrobenzene-d5	76.9		35.8-124		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 2-Fluorobiphenyl	66.8		24.5-139		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 4-Terphenyl-d14	54.2		29.4-129		%REC	1	5/21/2015 3:04:40 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0042	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Toluene	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Ethylbenzene	ND	0.0026	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0040	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,4-Trimethylbenzene	ND	0.0014	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3,5-Trimethylbenzene	ND	0.0019	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Naphthalene	ND	0.0067	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1-Methylnaphthalene	ND	0.017	0.11		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Methylnaphthalene	ND	0.019	0.11		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Acetone	0.054	0.021	0.43	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromobenzene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromodichloromethane	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 10:00:00 AM
Lab ID: 1505570-001 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromomethane	0.023	0.0055	0.085	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Butanone	ND	0.018	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Carbon disulfide	ND	0.020	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Carbon tetrachloride	ND	0.0028	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chlorobenzene	ND	0.0022	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloroethane	ND	0.022	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloroform	ND	0.0030	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloromethane	ND	0.0033	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Chlorotoluene	ND	0.0032	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Chlorotoluene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
cis-1,2-DCE	ND	0.0036	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
cis-1,3-Dichloropropene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0049	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dibromochloromethane	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dibromomethane	ND	0.0030	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichlorobenzene	ND	0.0017	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3-Dichlorobenzene	ND	0.0033	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,4-Dichlorobenzene	ND	0.0035	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dichlorodifluoromethane	ND	0.0071	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloroethane	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloroethene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichloropropane	ND	0.0016	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3-Dichloropropane	ND	0.0039	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2,2-Dichloropropane	ND	0.0041	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloropropene	ND	0.0042	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Hexachlorobutadiene	ND	0.0039	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Hexanone	ND	0.0070	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Isopropylbenzene	ND	0.0024	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Isopropyltoluene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Methyl-2-pentanone	ND	0.0049	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Methylene chloride	ND	0.011	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
n-Butylbenzene	ND	0.0024	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
n-Propylbenzene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
sec-Butylbenzene	0.0097	0.0040	0.028	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Styrene	ND	0.0052	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
tert-Butylbenzene	ND	0.0032	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 10:00:00 AM
Lab ID: 1505570-001
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0025	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
trans-1,2-DCE	ND	0.0018	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
trans-1,3-Dichloropropene	ND	0.0051	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,3-Trichlorobenzene	ND	0.0060	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0052	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,1-Trichloroethane	ND	0.0043	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,2-Trichloroethane	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Trichloroethene (TCE)	ND	0.0028	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Trichlorofluoromethane	ND	0.0086	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,3-Trichloropropane	ND	0.0048	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Vinyl chloride	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Xylenes, Total	ND	0.0079	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Surr: Dibromofluoromethane	105		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: 1,2-Dichloroethane-d4	114		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: Toluene-d8	95.1		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: 4-Bromofluorobenzene	80.4		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	50	0.71	2.8		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Surr: BFB	130	0	67.4-150		%REC	1	5/14/2015 12:35:07 PM	R26209

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (21-23')
Project: SWMU 10
Collection Date: 5/12/2015 10:15:00 AM
Lab ID: 1505570-002 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.2	11		mg/Kg-dr	1	5/14/2015 1:28:39 PM	19200
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/14/2015 1:28:39 PM	19200
Surr: DNOP	111	0	57.9-140		%REC	1	5/14/2015 1:28:39 PM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.5	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0032	0.0030	0.035	J	mg/Kg-dr	1	5/29/2015 12:39:20 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	7.1	13		mg/Kg-dr	5	5/27/2015 10:13:57 AM	19259
Arsenic	1.1	0.32	2.7	J	mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Barium	220	0.032	0.11		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Beryllium	0.79	0.0080	0.16		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Chromium	8.9	0.065	0.32		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Cobalt	5.0	0.041	0.32		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Iron	15000	65	270		mg/Kg-dr	100	5/16/2015 3:45:46 PM	19259
Lead	3.6	0.12	0.27		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Manganese	410	0.13	0.22		mg/Kg-dr	2	5/16/2015 4:20:35 PM	19259
Nickel	11	0.14	0.54		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Selenium	ND	1.6	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Vanadium	7.3	0.036	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Zinc	16	0.69	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Anthracene	ND	0.094	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benz(a)anthracene	ND	0.087	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (21-23')
Project: SWMU 10
Collection Date: 5/12/2015 10:15:00 AM
Lab ID: 1505570-002
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
3,3´-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dimethylphenol	ND	0.087	0.33		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (21-23')
Project: SWMU 10
Collection Date: 5/12/2015 10:15:00 AM
Lab ID: 1505570-002
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pyridine	ND	0.093	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Surr: 2-Fluorophenol	86.7		26.4-129		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: Phenol-d5	90.8		34.8-118		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 2,4,6-Tribromophenol	89.4		26.8-128		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: Nitrobenzene-d5	88.2		35.8-124		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 2-Fluorobiphenyl	89.2		24.5-139		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 4-Terphenyl-d14	71.8		29.4-129		%REC	1	5/19/2015 8:52:03 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0224	0.000499	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Toluene	0.0147	0.000230	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Ethylbenzene	0.00331	0.000372	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Xylenes, Total	0.0115	0.00132	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000929	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,4-Trimethylbenzene	0.00376	0.000579	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3,5-Trimethylbenzene	0.00233	0.000388	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichloroethane (EDC)	ND	0.000593	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dibromoethane (EDB)	ND	0.000265	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Naphthalene	0.00101	0.000724	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1-Methylnaphthalene	ND	0.000870	0.00443		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Methylnaphthalene	ND	0.000865	0.00443		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Acetone	0.00282	0.00138	0.0111	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromobenzene	ND	0.000616	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (21-23')
Project: SWMU 10
Collection Date: 5/12/2015 10:15:00 AM
Lab ID: 1505570-002
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000299	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromoform	ND	0.000574	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromomethane	ND	0.00131	0.00332		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Butanone	ND	0.000709	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Carbon tetrachloride	ND	0.000401	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chlorobenzene	ND	0.000224	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloroethane	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloroform	ND	0.000456	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloromethane	ND	0.000261	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Chlorotoluene	ND	0.000432	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Carbon disulfide	ND	0.00100	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Chlorotoluene	ND	0.000427	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
cis-1,2-DCE	ND	0.000586	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
cis-1,3-Dichloropropene	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dibromo-3-chloropropane	ND	0.000651	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dibromochloromethane	ND	0.000248	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dibromomethane	ND	0.00126	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichlorobenzene	ND	0.000491	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3-Dichlorobenzene	ND	0.000375	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,4-Dichlorobenzene	ND	0.000348	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dichlorodifluoromethane	ND	0.000904	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloroethane	ND	0.000517	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloroethene	ND	0.000370	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichloropropane	ND	0.000473	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3-Dichloropropane	ND	0.000345	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2,2-Dichloropropane	ND	0.000385	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloropropene	ND	0.000406	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Hexachlorobutadiene	ND	0.000447	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Isopropylbenzene	0.000543	0.000514	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Isopropyltoluene	ND	0.000859	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Methylene chloride	ND	0.000547	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
n-Butylbenzene	ND	0.000909	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Hexanone	ND	0.000461	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
n-Propylbenzene	0.000587	0.000415	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
sec-Butylbenzene	0.000853	0.000559	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Styrene	ND	0.000367	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Methyl-2-pentanone	ND	0.000935	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
tert-Butylbenzene	ND	0.000339	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,1,2-Tetrachloroethane	ND	0.000360	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14 (21-23')
Project: SWMU 10
Collection Date: 5/12/2015 10:15:00 AM
Lab ID: 1505570-002
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000487	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Tetrachloroethene (PCE)	ND	0.000439	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
trans-1,2-DCE	ND	0.000358	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
trans-1,3-Dichloropropene	ND	0.000290	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,3-Trichlorobenzene	ND	0.000810	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,4-Trichlorobenzene	ND	0.000830	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,1-Trichloroethane	ND	0.000315	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,2-Trichloroethane	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Trichloroethene (TCE)	ND	0.000440	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Trichlorofluoromethane	ND	0.000447	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,3-Trichloropropane	ND	0.000778	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Vinyl chloride	ND	0.000253	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Surr: 1,2-Dichloroethane-d4	85.0	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: Dibromofluoromethane	92.0	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: Toluene-d8	81.3	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.82	3.3		mg/Kg-dr	1	5/15/2015 3:41:52 PM	R26221
Surr: BFB	106	0	67.4-150		%REC	1	5/15/2015 3:41:52 PM	R26221

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (4-6')
Project: SWMU 10
Collection Date: 5/12/2015 12:00:00 PM
Lab ID: 1505570-003 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3800	54	98		mg/Kg-dr	10	5/15/2015 9:27:18 AM	19200
Motor Oil Range Organics (MRO)	680	490	490		mg/Kg-dr	10	5/15/2015 9:27:18 AM	19200
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 9:27:18 AM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.050	0.0031	0.035		mg/Kg-dr	1	5/29/2015 12:44:48 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Arsenic	ND	0.33	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Barium	240	0.034	0.11		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Beryllium	0.61	0.0084	0.17		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Chromium	7.3	0.068	0.34		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Cobalt	3.5	0.043	0.34		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Iron	9200	68	280		mg/Kg-dr	100	5/16/2015 3:47:09 PM	19259
Lead	3.4	0.12	0.28		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Manganese	320	0.13	0.23		mg/Kg-dr	2	5/16/2015 4:23:20 PM	19259
Nickel	5.8	0.15	0.57		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Vanadium	13	0.038	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Zinc	16	0.73	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Acenaphthylene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Aniline	ND	0.98	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Anthracene	ND	0.95	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Azobenzene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benz(a)anthracene	ND	0.88	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(a)pyrene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzoic acid	ND	0.64	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzyl alcohol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (4-6')
Project: SWMU 10
Collection Date: 5/12/2015 12:00:00 PM
Lab ID: 1505570-003 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.86	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Butyl benzyl phthalate	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Carbazole	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chloroaniline	ND	1.0	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Chlorophenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Chrysene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Di-n-butyl phthalate	ND	1.3	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Di-n-octyl phthalate	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dibenzofuran	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
3,3´-Dichlorobenzidine	ND	0.86	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Diethyl phthalate	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dimethyl phthalate	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dichlorophenol	ND	1.1	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dimethylphenol	ND	0.88	3.4		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.61	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dinitrophenol	ND	0.47	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,6-Dinitrotoluene	ND	1.2	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Fluoranthene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Fluorene	1.8	1.5	2.2	J	mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorobutadiene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorocyclopentadiene	ND	0.78	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachloroethane	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Isophorone	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1-Methylnaphthalene	14	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Methylnaphthalene	23	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Methylphenol	ND	1.1	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (4-6')
Project: SWMU 10
Collection Date: 5/12/2015 12:00:00 PM
Lab ID: 1505570-003
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Naphthalene	5.3	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Nitroaniline	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
3-Nitroaniline	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Nitroaniline	ND	1.0	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Nitrobenzene	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Nitrophenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Nitrophenol	ND	0.97	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pentachlorophenol	ND	0.70	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Phenanthrene	3.6	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Phenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pyrene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pyridine	ND	0.94	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,2,4-Trichlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 4:27:15 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.023	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Toluene	0.021	0.019	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Ethylbenzene	0.10	0.014	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,4-Trimethylbenzene	0.40	0.0078	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3,5-Trimethylbenzene	0.31	0.010	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Naphthalene	0.54	0.037	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1-Methylnaphthalene	1.6	0.094	0.63		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Methylnaphthalene	1.8	0.10	0.63		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Acetone	0.15	0.12	2.4	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromobenzene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromodichloromethane	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (4-6')
Project: SWMU 10
Collection Date: 5/12/2015 12:00:00 PM
Lab ID: 1505570-003
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromomethane	0.12	0.030	0.47	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Butanone	ND	0.10	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Carbon disulfide	ND	0.11	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Carbon tetrachloride	ND	0.015	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chlorobenzene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloroethane	ND	0.12	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloroform	ND	0.016	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloromethane	ND	0.018	0.47		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Chlorotoluene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Chlorotoluene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
cis-1,2-DCE	ND	0.020	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
cis-1,3-Dichloropropene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.027	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dibromochloromethane	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dibromomethane	ND	0.017	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichlorobenzene	ND	0.0095	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3-Dichlorobenzene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,4-Dichlorobenzene	ND	0.020	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dichlorodifluoromethane	ND	0.039	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloroethane	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloroethene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichloropropane	ND	0.0088	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3-Dichloropropane	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2,2-Dichloropropane	ND	0.023	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloropropene	ND	0.023	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Hexachlorobutadiene	ND	0.022	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Hexanone	ND	0.039	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Isopropylbenzene	0.040	0.013	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Isopropyltoluene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Methyl-2-pentanone	ND	0.027	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Methylene chloride	ND	0.063	0.47		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
n-Butylbenzene	0.063	0.014	0.47	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
n-Propylbenzene	0.057	0.012	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
sec-Butylbenzene	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Styrene	ND	0.029	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
tert-Butylbenzene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.019	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (4-6')
Project: SWMU 10
Collection Date: 5/12/2015 12:00:00 PM
Lab ID: 1505570-003
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.014	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
trans-1,2-DCE	ND	0.010	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
trans-1,3-Dichloropropene	ND	0.028	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,3-Trichlorobenzene	ND	0.034	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,4-Trichlorobenzene	ND	0.029	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,1-Trichloroethane	ND	0.024	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,2-Trichloroethane	ND	0.019	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Trichloroethene (TCE)	ND	0.015	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Trichlorofluoromethane	ND	0.047	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,3-Trichloropropane	ND	0.026	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Vinyl chloride	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Xylenes, Total	0.73	0.044	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Surr: Dibromofluoromethane	106		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: Toluene-d8	98.2		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: 4-Bromofluorobenzene	87.5		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	40	3.9	16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Surr: BFB	111	0	67.4-150		%REC	5	5/14/2015 1:03:56 PM	R26209

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (8-10')
Project: SWMU 10
Collection Date: 5/12/2015 12:15:00 PM
Lab ID: 1505570-004 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	870	5.3	9.6		mg/Kg-dr	1	5/15/2015 10:20:57 AM	19200
Motor Oil Range Organics (MRO)	280	48	48		mg/Kg-dr	1	5/15/2015 10:20:57 AM	19200
Surr: DNOP	173	0	57.9-140	S	%REC	1	5/15/2015 10:20:57 AM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.014	0.0037	0.042	J	mg/Kg-dr	1	5/29/2015 12:46:33 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.2	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Arsenic	0.91	0.72	6.2	J	mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Barium	330	0.073	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Beryllium	0.98	0.018	0.37		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Cadmium	ND	0.068	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Chromium	8.1	0.15	0.74		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Cobalt	5.0	0.093	0.74		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Iron	12000	74	310		mg/Kg-dr	100	5/16/2015 3:48:48 PM	19259
Lead	5.8	0.27	0.62		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Manganese	400	0.14	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Nickel	7.8	0.32	1.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Selenium	ND	3.8	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Silver	ND	0.073	0.62		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Vanadium	14	0.082	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Zinc	18	1.6	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Aniline	ND	1.0	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Azobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benz(a)anthracene	ND	0.94	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(a)pyrene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzoic acid	ND	0.69	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (8-10')
Project: SWMU 10
Collection Date: 5/12/2015 12:15:00 PM
Lab ID: 1505570-004
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.92	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.4	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chloro-3-methylphenol	ND	1.2	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chloroaniline	ND	1.1	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Di-n-butyl phthalate	ND	1.4	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Di-n-octyl phthalate	ND	1.3	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
3,3´-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dichlorophenol	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dimethylphenol	ND	0.94	3.6		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.65	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dinitrophenol	ND	0.50	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dinitrotoluene	ND	1.1	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,6-Dinitrotoluene	ND	1.3	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Fluorene	ND	1.6	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorocyclopentadiene	ND	0.83	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Isophorone	ND	1.3	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1-Methylnaphthalene	3.8	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Methylnaphthalene	5.7	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Methylphenol	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (8-10')
Project: SWMU 10
Collection Date: 5/12/2015 12:15:00 PM
Lab ID: 1505570-004
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Naphthalene	1.2	1.1	2.4	J	mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Nitroaniline	ND	1.1	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Nitrobenzene	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pentachlorophenol	ND	0.75	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Phenanthrene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pyridine	ND	1.0	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 4:54:49 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0048	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Toluene	0.020	0.0038	0.032	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Ethylbenzene	0.21	0.0030	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0046	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,4-Trimethylbenzene	0.79	0.0016	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3,5-Trimethylbenzene	0.29	0.0021	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Naphthalene	0.46	0.0077	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1-Methylnaphthalene	1.3	0.019	0.13		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Methylnaphthalene	2.3	0.021	0.13		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Acetone	0.058	0.024	0.48	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromobenzene	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromodichloromethane	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (8-10')
Project: SWMU 10
Collection Date: 5/12/2015 12:15:00 PM
Lab ID: 1505570-004
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromomethane	0.026	0.0062	0.097	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Butanone	ND	0.021	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Carbon disulfide	ND	0.023	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Carbon tetrachloride	ND	0.0031	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chlorobenzene	ND	0.0025	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloroethane	ND	0.025	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloroform	ND	0.0034	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloromethane	ND	0.0037	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Chlorotoluene	ND	0.0037	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Chlorotoluene	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
cis-1,2-DCE	ND	0.0041	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
cis-1,3-Dichloropropene	ND	0.0022	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0056	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dibromochloromethane	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dibromomethane	ND	0.0034	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichlorobenzene	ND	0.0019	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3-Dichlorobenzene	ND	0.0038	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,4-Dichlorobenzene	ND	0.0040	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dichlorodifluoromethane	ND	0.0081	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloroethane	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloroethene	ND	0.0022	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichloropropane	ND	0.0018	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3-Dichloropropane	ND	0.0045	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2,2-Dichloropropane	ND	0.0047	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloropropene	ND	0.0048	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Hexachlorobutadiene	ND	0.0045	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Hexanone	ND	0.0079	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Isopropylbenzene	0.077	0.0027	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Isopropyltoluene	ND	0.0023	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Methyl-2-pentanone	ND	0.0056	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Methylene chloride	ND	0.013	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
n-Butylbenzene	0.098	0.0028	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
n-Propylbenzene	0.12	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
sec-Butylbenzene	0.051	0.0046	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Styrene	ND	0.0059	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
tert-Butylbenzene	ND	0.0037	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0027	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0039	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (8-10')
Project: SWMU 10
Collection Date: 5/12/2015 12:15:00 PM
Lab ID: 1505570-004
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0028	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
trans-1,2-DCE	ND	0.0021	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
trans-1,3-Dichloropropene	ND	0.0058	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,3-Trichlorobenzene	ND	0.0069	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0060	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,1-Trichloroethane	ND	0.0049	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,2-Trichloroethane	ND	0.0039	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Trichloroethene (TCE)	ND	0.0031	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Trichlorofluoromethane	ND	0.0098	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,3-Trichloropropane	ND	0.0054	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Vinyl chloride	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Xylenes, Total	1.7	0.0090	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: Toluene-d8	87.5		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: 4-Bromofluorobenzene	89.2		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	68	0.81	3.2		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Surr: BFB	109	0	67.4-150		%REC	1	5/14/2015 1:32:43 PM	R26209

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (18-20')
Project: SWMU 10
Collection Date: 5/12/2015 12:25:00 PM
Lab ID: 1505570-005 **Matrix:** SOIL **Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.4	12		mg/Kg-dr	1	5/14/2015 3:15:18 PM	19200
Motor Oil Range Organics (MRO)	ND	58	58		mg/Kg-dr	1	5/14/2015 3:15:18 PM	19200
Surr: DNOP	108	0	57.9-140		%REC	1	5/14/2015 3:15:18 PM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.037		mg/Kg-dr	1	5/31/2015 10:41:10 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.0	5.7		mg/Kg-dr	2	5/16/2015 4:29:02 PM	19259
Arsenic	0.84	0.34	2.9	J	mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Barium	420	0.068	0.23		mg/Kg-dr	2	5/16/2015 4:29:02 PM	19259
Beryllium	0.89	0.0085	0.17		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Chromium	11	0.069	0.34		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Cobalt	7.7	0.043	0.34		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Iron	16000	69	290		mg/Kg-dr	100	5/16/2015 3:50:18 PM	19259
Lead	3.5	0.12	0.29		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Manganese	890	0.34	0.57		mg/Kg-dr	5	5/16/2015 4:48:11 PM	19259
Nickel	13	0.15	0.57		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Vanadium	5.2	0.038	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Zinc	23	0.74	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Aniline	ND	0.099	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benz(a)anthracene	ND	0.089	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzoic acid	ND	0.065	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270

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CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (18-20')
Project: SWMU 10
Collection Date: 5/12/2015 12:25:00 PM
Lab ID: 1505570-005
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.087	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chloroaniline	ND	0.11	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
3,3´-Dichlorobenzidine	ND	0.088	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dimethylphenol	ND	0.089	0.34		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dinitrophenol	ND	0.047	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorocyclopentadiene	ND	0.079	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Methylphenol	ND	0.11	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (18-20')
Project: SWMU 10
Collection Date: 5/12/2015 12:25:00 PM
Lab ID: 1505570-005
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Nitrophenol	ND	0.098	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pentachlorophenol	ND	0.071	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Surr: 2-Fluorophenol	60.4		26.4-129		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: Phenol-d5	62.4		34.8-118		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 2,4,6-Tribromophenol	63.2		26.8-128		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: Nitrobenzene-d5	61.0		35.8-124		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 2-Fluorobiphenyl	56.7		24.5-139		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 4-Terphenyl-d14	51.3		29.4-129		%REC	1	5/19/2015 9:20:04 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0260	0.000547	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Toluene	0.0162	0.000252	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Ethylbenzene	0.00371	0.000408	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Xylenes, Total	0.0121	0.00145	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00102	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,4-Trimethylbenzene	0.00377	0.000634	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3,5-Trimethylbenzene	0.00245	0.000426	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichloroethane (EDC)	ND	0.000650	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dibromoethane (EDB)	ND	0.000290	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Naphthalene	0.00119	0.000793	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1-Methylnaphthalene	0.00126	0.000953	0.00485	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Methylnaphthalene	0.00130	0.000948	0.00485	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Acetone	0.00262	0.00152	0.0121	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromobenzene	ND	0.000675	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (18-20')
Project: SWMU 10
Collection Date: 5/12/2015 12:25:00 PM
Lab ID: 1505570-005
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000328	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromoform	ND	0.000629	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromomethane	ND	0.00144	0.00364		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Butanone	ND	0.000777	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Carbon tetrachloride	ND	0.000439	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chlorobenzene	ND	0.000246	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloroethane	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloroform	ND	0.000500	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloromethane	ND	0.000286	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Chlorotoluene	ND	0.000474	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Carbon disulfide	ND	0.00110	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Chlorotoluene	ND	0.000468	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
cis-1,2-DCE	ND	0.000642	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
cis-1,3-Dichloropropene	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dibromo-3-chloropropane	ND	0.000713	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dibromochloromethane	ND	0.000272	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dibromomethane	ND	0.00138	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichlorobenzene	ND	0.000539	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3-Dichlorobenzene	ND	0.000411	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,4-Dichlorobenzene	ND	0.000381	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dichlorodifluoromethane	ND	0.000991	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloroethane	ND	0.000567	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloroethene	ND	0.000405	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichloropropane	ND	0.000519	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3-Dichloropropane	ND	0.000378	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2,2-Dichloropropane	ND	0.000422	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloropropene	ND	0.000444	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Hexachlorobutadiene	ND	0.000490	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Isopropylbenzene	0.000607	0.000563	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Isopropyltoluene	ND	0.000942	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Methylene chloride	0.000813	0.000600	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
n-Butylbenzene	ND	0.000996	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Hexanone	ND	0.000505	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
n-Propylbenzene	0.000680	0.000454	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
sec-Butylbenzene	0.000947	0.000613	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Styrene	ND	0.000402	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Methyl-2-pentanone	ND	0.00102	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
tert-Butylbenzene	ND	0.000372	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,1,2-Tetrachloroethane	ND	0.000395	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221

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CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11 (18-20')
Project: SWMU 10
Collection Date: 5/12/2015 12:25:00 PM
Lab ID: 1505570-005
Matrix: SOIL
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000534	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Tetrachloroethene (PCE)	ND	0.000481	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
trans-1,2-DCE	ND	0.000392	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
trans-1,3-Dichloropropene	ND	0.000317	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,3-Trichlorobenzene	ND	0.000888	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,4-Trichlorobenzene	ND	0.000909	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,1-Trichloroethane	ND	0.000345	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,2-Trichloroethane	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Trichloroethene (TCE)	ND	0.000482	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Trichlorofluoromethane	ND	0.000490	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,3-Trichloropropane	ND	0.000852	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Vinyl chloride	ND	0.000277	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Surr: 1,2-Dichloroethane-d4	92.4	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: Toluene-d8	83.2	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.91	3.6		mg/Kg-dr	1	5/14/2015 3:57:02 PM	R26209
Surr: BFB	113	0	67.4-150		%REC	1	5/14/2015 3:57:02 PM	R26209

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-01

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-001C SWMU 10-14 6-8FT

Project # :

Collected By :
Collection Date : 05/12/15 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-35.		mV	2580 B-2011	05/19/15	1
pH	8.4	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-01 (PH) - 8.4 at 20.2c

ESC
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Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-02

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-002C SWMU 10-14 21-23FT

Project # :

Collected By :
Collection Date : 05/12/15 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-29.		mV	2580 B-2011	05/19/15	1
pH	9.0	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-02 (PH) - 9.0 at 20.4c

ESC
L·A·B S·C·I·E·N·C·E·S
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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-03

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-003C SWMU 10-11 4-6FT

Project # :

Collected By :
Collection Date : 05/12/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	27.		mV	2580 B-2011	05/19/15	1
pH	7.5	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-03 (PH) - 7.5 at 20.7c

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Est. 1970

REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-04

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-004C SWMU 10-11 8-10FT

Project # :

Collected By :
Collection Date : 05/12/15 12:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	15.		mV	2580 B-2011	05/19/15	1
pH	7.9	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-04 (PH) - 7.9 at 20.7c

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-05

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-005C SWMU 10-11 18-20FT

Project # :

Collected By :
Collection Date : 05/12/15 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-4.0		mV	2580 B-2011	05/19/15	1
pH	9.2	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-05 (PH) - 9.2 at 20.5c

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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765169

May 21, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG789309	05/16/15 13:30
Cyanide	< .25	mg/kg			WG789989	05/21/15 08:51

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	5.70	5.70	0.699	1	L764621-01	WG789052
pH	su	7.90	7.90	0.127	1	L765205-01	WG789052
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L765169-05	WG789309
ORP	mV	18.0	19.0	5.41	20	L765012-01	WG789737
ORP	mV	71.0	70.0	1.42	20	L765462-10	WG789737
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-01	WG789989
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-03	WG789989

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.74	98.7	98.3-101.7	WG789052
Chromium,Hexavalent	mg/kg	59.8	71.8	120.*	80-120	WG789309
ORP	mV	100	104.	104.	90-110	WG789737
Cyanide	mg/kg	101	117.	116.	50-150	WG789989

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.76	7.74	99.0	98.3-101.7	0.258	20	WG789052
Chromium,Hexavalent	mg/kg	71.8	71.8	120.	80-120	0.0	20	WG789309
ORP	mV	105.	104.	105.	90-110	0.957	20	WG789737
Cyanide	mg/kg	125.	117.	124.	50-150	6.61	20	WG789989

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	22.4	0.0	20	110.	75-125	L765169-05	WG789309
Cyanide	mg/kg	3.32	0.0	3.33	100.	80-120	L765575-02	WG789989

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765169

May 21, 2015

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	23.2	22.4	116.	75-125	3.51	20	L765169-05	WG789309
Cyanide	mg/kg	3.47	3.32	104.	80-120	4.42	20	L765575-02	WG789989

Batch number /Run number / Sample number cross reference

WG789052: R3037239: L765169-01 02 03 04 05
WG789309: R3037394: L765169-01 02 03 04 05
WG789737: R3038093: L765169-01 02 03 04 05
WG789989: R3038429: L765169-01 02 03 04 05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19200**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**PBS**	Batch ID:	**19200**	RunNo:	**26179**
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	57.9	140			

Sample ID	**LCS-19200**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**LCSS**	Batch ID:	**19200**	RunNo:	**26179**
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776930** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	67.8	130			
Surr: DNOP	5.5		5.000		110	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**
27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0085	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.023	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	118	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.2	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID **1505570-003a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-11 (4-6')**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777617** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.6	0.28	5.590	0	99.8	57.8	132			
Toluene	5.7	0.28	5.590	0.02054	102	54.8	139			
Chlorobenzene	5.7	0.28	5.590	0	102	63.5	134			
1,1-Dichloroethene	6.0	0.28	5.590	0	108	26.4	145			
Trichloroethene (TCE)	5.1	0.28	5.590	0	90.4	54.9	125			
Surr: Dibromofluoromethane	2.6		2.795		93.6	70	130			
Surr: 1,2-Dichloroethane-d4	2.8		2.795		101	70	130			
Surr: Toluene-d8	2.7		2.795		98.2	70	130			
Surr: 4-Bromofluorobenzene	2.8		2.795		101	70	130			

Sample ID **1505570-003a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-11 (4-6')**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777618** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.5	0.28	5.590	0	97.6	57.8	132	2.27	20	
Toluene	5.5	0.28	5.590	0.02054	98.1	54.8	139	4.10	20	
Chlorobenzene	5.6	0.28	5.590	0	100	63.5	134	2.03	20	
1,1-Dichloroethene	6.2	0.28	5.590	0	111	26.4	145	3.06	20	
Trichloroethene (TCE)	4.9	0.28	5.590	0	88.3	54.9	125	2.40	20	
Surr: Dibromofluoromethane	2.8		2.795		101	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	3.0		2.795		107	70	130	0	0	
Surr: Toluene-d8	2.7		2.795		97.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.4		2.795		86.3	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778723** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19270**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Sample ID **1505570-001Bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-14 (6-8')**	Batch ID: **19270**	RunNo: **26352**
Prep Date: **5/18/2015**	Analysis Date: **5/21/2015**	SeqNo: **783097** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.23	1.884	0	77.1	36.3	121			
4-Chloro-3-methylphenol	2.2	0.56	3.756	0	58.7	48.2	119			
2-Chlorophenol	2.3	0.23	3.756	0	60.6	37.2	114			
1,4-Dichlorobenzene	1.1	0.23	1.884	0	59.7	28.8	106			
2,4-Dinitrotoluene	1.0	0.56	1.884	0	54.1	34.6	111			
N-Nitrosodi-n-propylamine	1.3	0.23	1.884	0	68.3	32.7	117			
4-Nitrophenol	2.6	0.28	3.756	0	68.3	30.1	134			
Pentachlorophenol	2.0	0.45	3.756	0.07937	49.8	24	120			
Phenol	2.3	0.23	3.756	0	61.4	38.3	118			
Pyrene	1.4	0.23	1.884	0	75.0	38.3	134			
1,2,4-Trichlorobenzene	1.2	0.23	1.884	0	61.2	31.8	110			
Surr: 2-Fluorophenol	2.2		3.756		57.6	26.4	129			
Surr: Phenol-d5	2.5		3.756		66.1	34.8	118			
Surr: 2,4,6-Tribromophenol	2.3		3.756		59.9	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.884		67.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.3		1.884		68.2	24.5	139			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505570-001Bms**	SampType:	**MS**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19270**	RunNo:	**26352**
Prep Date:	**5/18/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783097** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.1		1.884		55.8	29.4	129			

Sample ID	**1505570-001Bmsd**	SampType:	**MSD**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19270**	RunNo:	**26352**
Prep Date:	**5/18/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783098** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.23	1.880	0	82.0	36.3	121	6.00	25.4	
4-Chloro-3-methylphenol	2.5	0.56	3.749	0	66.7	48.2	119	12.6	30.4	
2-Chlorophenol	2.7	0.23	3.749	0	71.7	37.2	114	16.4	33.4	
1,4-Dichlorobenzene	1.3	0.23	1.880	0	71.3	28.8	106	17.5	20.9	
2,4-Dinitrotoluene	1.1	0.56	1.880	0	56.7	34.6	111	4.66	27.9	
N-Nitrosodi-n-propylamine	1.7	0.23	1.880	0	93.0	32.7	117	30.4	27.5	R
4-Nitrophenol	3.0	0.28	3.749	0	81.1	30.1	134	16.9	33.7	
Pentachlorophenol	1.9	0.45	3.749	0.07937	49.3	24	120	1.25	39.7	
Phenol	2.7	0.23	3.749	0	73.2	38.3	118	17.3	30.1	
Pyrene	1.5	0.23	1.880	0	80.8	38.3	134	7.25	22.7	
1,2,4-Trichlorobenzene	1.2	0.23	1.880	0	63.9	31.8	110	4.14	27.8	
Surr: 2-Fluorophenol	2.6		3.749		68.8	26.4	129	0	0	
Surr: Phenol-d5	3.0		3.749		79.2	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.2		3.749		57.5	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.5		1.880		81.7	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.4		1.880		74.9	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.1		1.880		60.6	29.4	129	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19445**	SampType: **MBLK**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID: **19445**			RunNo: **26497**				
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787358**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19445**	SampType: **LCS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID: **19445**			RunNo: **26497**				
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787359**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.7	80	120			

Sample ID	**1505570-002BMS**	SampType: **MS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**SWMU 10-14 (21-23'**	Batch ID: **19445**			RunNo: **26497**				
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787374**		Units: **mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.035	0.1789	0.003199	103	75	125			

Sample ID	**1505570-002BMSD**	SampType: **MSD**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**SWMU 10-14 (21-23'**	Batch ID: **19445**			RunNo: **26497**				
Prep Date:	**5/28/2015**	Analysis Date: **5/29/2015**			SeqNo: **787375**		Units: **mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.036	0.1839	0.003199	102	75	125	1.94	20	

Sample ID	**MB-19475**	SampType: **MBLK**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID: **19475**			RunNo: **26535**				
Prep Date:	**5/30/2015**	Analysis Date: **5/31/2015**			SeqNo: **788620**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19475**	SampType: **LCS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID: **19475**			RunNo: **26535**				
Prep Date:	**5/30/2015**	Analysis Date: **5/31/2015**			SeqNo: **788621**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	97.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19259**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19259**	RunNo: **26236**
Prep Date: **5/15/2015**	Analysis Date: **5/16/2015**	SeqNo: **778671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	0.054	0.10								J
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.77	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	0.032	0.25								J
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-19259**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19259**	RunNo: **26236**
Prep Date: **5/15/2015**	Analysis Date: **5/16/2015**	SeqNo: **778674** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	93.9	80	120			
Arsenic	27	2.5	25.00	0	109	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	27	0.15	25.00	0	106	80	120			
Cadmium	26	0.10	25.00	0	104	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.4	80	120			
Iron	25	2.5	25.00	0	99.0	80	120			
Lead	25	0.25	25.00	0	99.7	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	101	80	120			
Selenium	29	2.5	25.00	0	115	80	120			
Silver	5.4	0.25	5.000	0	108	80	120			
Vanadium	26	2.5	25.00	0	106	80	120			
Zinc	27	2.5	25.00	0	107	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505570-001BMS**	SampType:	**MS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19259**		RunNo:	**26236**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/16/2015**		SeqNo:	**778691**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.7	27.39	0.8732	85.5	75	125			
Beryllium	25	0.16	27.39	0.7775	87.7	75	125			
Cadmium	24	0.11	27.39	0	88.6	75	125			
Chromium	31	0.33	27.39	7.019	87.8	75	125			
Cobalt	26	0.33	27.39	4.480	79.4	75	125			
Nickel	29	0.55	27.39	7.061	80.2	75	125			
Selenium	21	2.7	27.39	0	78.1	75	125			
Silver	4.9	0.27	5.479	0	89.7	75	125			
Vanadium	36	2.7	27.39	12.52	86.8	75	125			
Zinc	37	2.7	27.39	13.76	83.9	75	125			

Sample ID	**1505570-001BMSD**	SampType:	**MSD**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19259**		RunNo:	**26236**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/16/2015**		SeqNo:	**778692**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.9	28.67	0.8732	84.9	75	125	3.62	20	
Beryllium	26	0.17	28.67	0.7775	87.6	75	125	4.31	20	
Cadmium	25	0.11	28.67	0	87.2	75	125	2.90	20	
Chromium	32	0.34	28.67	7.019	85.5	75	125	1.46	20	
Cobalt	27	0.34	28.67	4.480	78.6	75	125	2.89	20	
Nickel	30	0.57	28.67	7.061	78.6	75	125	1.91	20	
Selenium	22	2.9	28.67	0	77.9	75	125	4.33	20	
Silver	5.1	0.29	5.733	0	88.3	75	125	3.06	20	
Vanadium	37	2.9	28.67	12.52	85.5	75	125	2.03	20	
Zinc	38	2.9	28.67	13.76	84.2	75	125	3.08	20	

Sample ID	**1505570-001BMS**	SampType:	**MS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19259**		RunNo:	**26236**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/16/2015**		SeqNo:	**778694**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	9.1	5.5	27.39	0	33.2	75	125			S

Sample ID	**1505570-001BMSD**	SampType:	**MSD**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19259**		RunNo:	**26236**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/16/2015**		SeqNo:	**778695**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	9.5	5.7	28.67	0	33.3	75	125	4.69	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505570-001BMS**	SampType:	**MS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19259**		RunNo:	**26236**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/16/2015**		SeqNo:	**779832**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	24	0.27	27.39	3.555	75.2	75	125			

Sample ID	**1505570-001BMSD**	SampType:	**MSD**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-14 (6-8')**	Batch ID:	**19259**		RunNo:	**26236**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/16/2015**		SeqNo:	**779833**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	25	0.29	28.67	3.555	74.4	75	125	2.94	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		98.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777631** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.6	79.9	135			
Surr: BFB	510		500.0		103	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778746** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.2	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778747** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Sample ID **1505570-002B MS**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-14 (21-23'**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778749** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	3.3	16.33	0	81.5	65.2	156			
Surr: BFB	360		326.6		110	67.4	150			

Sample ID **1505570-002B MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-14 (21-23'**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778750** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505570-002B MSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**SWMU 10-14 (21-23'**	Batch ID:	**R26221**	RunNo:	**26221**
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**778750**
Units:	**mg/Kg-dry**				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	3.3	16.33	0	79.8	65.2	156	2.13	20	
Surr: BFB	360		326.6		111	67.4	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505570 RcptNo: 1

Received by/date: AG 05/12/15

Logged By: Ashley Gallegos 5/12/2015 4:43:00 PM AG

Completed By: Ashley Gallegos 5/13/2015 10:12:37 AM AG

Reviewed By: AT 05/13/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505570
12.15	1000	SOIL	SWMU 10-14 (6-8')	2 JARS	—	-001
				2 VIALS	MEOH	
				2 VIALS	SOBI	
	1015		SWMU 10-14 (21-23')	2 JARS	—	-002
				2 VIALS	MEOH	
				2 VIALS	SOBI	
	1200		SWMU 10-11 (4-6')	2 JARS	—	-003
				2 VIALS	MEOH	
				2 VIALS	SOBI	
	1215		SWMU 10-11 (8-10')	2 JARS	—	-004
				2 VIALS	MEOH	
				2 VIALS	SOBI	

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					
		✓							✓	✓	✓			
									✓					
									✓					

Date:	Time:	Relinquished by:	Received by:	Date Time
12.15	1336			5-12-15 1336
Date:	Time:	Relinquished by:	Received by:	Date Time
12-15	1643			05/12/15 1643

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.12.15	1225	SOIL	SWMU 10-11 (18-20')	2 JARS	—	-005			✓							✓	✓	✓			
↓	↓	↓	↓	2 VIALS	MEOH											✓					
				2 VIALS	SOBI											✓					

Date: 5.12.15 Time: 1336 Relinquished by:
Received by: Date Time 5-12- 1336
Date: Time: Relinquished by:
Received by: Date Time
ANAgallegos 05/12/15 1643

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Hall Environmental Analysis Laboratory
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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 27, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505617

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 11 sample(s) on 5/13/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 23, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505617**
Date: **10/27/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 3:45:00 PM
Lab ID: 1505617-001 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/15/2015 9:35:32 AM	19228
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/15/2015 9:35:32 AM	19228
Surr: DNOP	101	0	57.9-140		%REC	1	5/15/2015 9:35:32 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0034	0.039		mg/Kg-dr	1	5/31/2015 10:42:57 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.0	5.6		mg/Kg-dr	2	5/20/2015 12:42:35 PM	19280
Arsenic	1.9	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Barium	1700	0.34	1.1		mg/Kg-dr	10	5/20/2015 1:36:17 PM	19280
Beryllium	1.1	0.0083	0.17		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Chromium	12	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Cobalt	5.7	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Iron	21000	68	280		mg/Kg-dr	100	5/20/2015 10:36:35 AM	19280
Lead	3.7	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:46:33 PM	19280
Manganese	470	0.13	0.23		mg/Kg-dr	2	5/20/2015 12:42:35 PM	19280
Nickel	10	0.14	0.56		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Vanadium	21	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Zinc	20	0.73	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 3:45:00 PM
Lab ID: 1505617-001
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
3,3´-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 3:45:00 PM
Lab ID: 1505617-001
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Surr: 2-Fluorophenol	59.0		26.4-129		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: Phenol-d5	59.9		34.8-118		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 2,4,6-Tribromophenol	67.1		26.8-128		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: Nitrobenzene-d5	58.5		35.8-124		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 2-Fluorobiphenyl	58.7		24.5-139		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 4-Terphenyl-d14	50.9		29.4-129		%REC	1	5/19/2015 9:48:06 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00132	0.000528	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Toluene	0.00101	0.000244	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Ethylbenzene	ND	0.000394	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Xylenes, Total	ND	0.00140	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000982	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,4-Trimethylbenzene	ND	0.000612	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3,5-Trimethylbenzene	ND	0.000411	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000628	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000280	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Naphthalene	ND	0.000765	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1-Methylnaphthalene	ND	0.000920	0.00468		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Methylnaphthalene	ND	0.000915	0.00468		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Acetone	0.00766	0.00146	0.0117	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromobenzene	ND	0.000652	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 3:45:00 PM
Lab ID: 1505617-001
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000316	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromoform	ND	0.000607	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromomethane	ND	0.00138	0.00351		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Butanone	0.00208	0.000750	0.0117	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Carbon tetrachloride	ND	0.000424	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chlorobenzene	ND	0.000237	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloroethane	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloroform	ND	0.000482	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloromethane	ND	0.000276	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Chlorotoluene	ND	0.000457	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Carbon disulfide	ND	0.00106	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Chlorotoluene	ND	0.000451	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
cis-1,2-DCE	ND	0.000619	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
cis-1,3-Dichloropropene	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000688	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dibromochloromethane	ND	0.000263	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dibromomethane	ND	0.00133	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichlorobenzene	ND	0.000520	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3-Dichlorobenzene	ND	0.000397	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,4-Dichlorobenzene	ND	0.000368	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dichlorodifluoromethane	ND	0.000956	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloroethane	ND	0.000547	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloroethene	ND	0.000391	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichloropropane	ND	0.000500	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3-Dichloropropane	ND	0.000365	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2,2-Dichloropropane	ND	0.000407	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloropropene	ND	0.000429	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Hexachlorobutadiene	ND	0.000473	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Isopropylbenzene	ND	0.000543	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Isopropyltoluene	ND	0.000909	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Methylene chloride	ND	0.000579	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
n-Butylbenzene	ND	0.000961	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Hexanone	ND	0.000487	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
n-Propylbenzene	ND	0.000438	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
sec-Butylbenzene	0.000831	0.000591	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Styrene	ND	0.000388	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Methyl-2-pentanone	ND	0.000989	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
tert-Butylbenzene	ND	0.000359	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000381	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (6-8')
Project: SWMU 10
Collection Date: 5/12/2015 3:45:00 PM
Lab ID: 1505617-001
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000515	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Tetrachloroethene (PCE)	ND	0.000464	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
trans-1,2-DCE	ND	0.000379	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
trans-1,3-Dichloropropene	ND	0.000306	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,3-Trichlorobenzene	ND	0.000857	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,4-Trichlorobenzene	ND	0.000877	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,1-Trichloroethane	ND	0.000333	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,2-Trichloroethane	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Trichloroethene (TCE)	ND	0.000465	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Trichlorofluoromethane	ND	0.000473	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,3-Trichloropropane	ND	0.000822	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Vinyl chloride	ND	0.000267	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Surr: 1,2-Dichloroethane-d4	99.1	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: Toluene-d8	82.9	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.77	3.1		mg/Kg-dr	1	5/14/2015 4:25:48 PM	R26209
Surr: BFB	110	0	67.4-150		%REC	1	5/14/2015 4:25:48 PM	R26209

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (20-22')
Project: SWMU 10
Collection Date: 5/12/2015 4:00:00 PM
Lab ID: 1505617-002 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/15/2015 9:56:50 AM	19228
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/15/2015 9:56:50 AM	19228
Surr: DNOP	98.0	0	57.9-140		%REC	1	5/15/2015 9:56:50 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	8.9	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 10:44:44 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Arsenic	2.0	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Barium	500	0.065	0.22		mg/Kg-dr	2	5/20/2015 12:45:15 PM	19280
Beryllium	0.94	0.0081	0.16		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Chromium	14	0.066	0.33		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Cobalt	9.1	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Iron	20000	66	270		mg/Kg-dr	100	5/20/2015 10:37:56 AM	19280
Lead	1.8	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:41:21 PM	19280
Manganese	1300	0.32	0.55		mg/Kg-dr	5	5/20/2015 1:42:46 PM	19280
Nickel	16	0.14	0.55		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Vanadium	25	0.037	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Zinc	28	0.71	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (20-22')
Project: SWMU 10
Collection Date: 5/12/2015 4:00:00 PM
Lab ID: 1505617-002
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
3,3´-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (20-22')
Project: SWMU 10
Collection Date: 5/12/2015 4:00:00 PM
Lab ID: 1505617-002
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Phenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Surr: 2-Fluorophenol	80.5		26.4-129		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: Phenol-d5	78.5		34.8-118		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 2,4,6-Tribromophenol	79.0		26.8-128		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: Nitrobenzene-d5	74.7		35.8-124		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 2-Fluorobiphenyl	74.7		24.5-139		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 4-Terphenyl-d14	65.8		29.4-129		%REC	1	5/19/2015 10:16:14 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0154	0.000621	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Toluene	0.0101	0.000287	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Ethylbenzene	0.00249	0.000463	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Xylenes, Total	0.00583	0.00164	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00116	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,4-Trimethylbenzene	0.00203	0.000720	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3,5-Trimethylbenzene	0.00134	0.000483	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000738	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000329	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Naphthalene	ND	0.000900	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1-Methylnaphthalene	ND	0.00108	0.00551		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Methylnaphthalene	ND	0.00108	0.00551		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Acetone	0.00740	0.00172	0.0138	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromobenzene	ND	0.000767	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (20-22')
Project: SWMU 10
Collection Date: 5/12/2015 4:00:00 PM
Lab ID: 1505617-002
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000372	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromoform	ND	0.000714	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromomethane	ND	0.00163	0.00413		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Butanone	0.00234	0.000882	0.0138	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Carbon tetrachloride	ND	0.000499	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chlorobenzene	ND	0.000279	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloroethane	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloroform	ND	0.000568	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloromethane	ND	0.000325	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Chlorotoluene	ND	0.000538	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Carbon disulfide	ND	0.00125	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Chlorotoluene	ND	0.000531	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
cis-1,2-DCE	ND	0.000729	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
cis-1,3-Dichloropropene	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000809	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dibromochloromethane	ND	0.000309	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dibromomethane	ND	0.00156	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichlorobenzene	ND	0.000611	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3-Dichlorobenzene	ND	0.000467	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,4-Dichlorobenzene	ND	0.000433	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dichlorodifluoromethane	ND	0.00112	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloroethane	ND	0.000644	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloroethene	ND	0.000460	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichloropropane	ND	0.000589	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3-Dichloropropane	ND	0.000429	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2,2-Dichloropropane	ND	0.000479	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloropropene	ND	0.000505	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Hexachlorobutadiene	ND	0.000556	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Isopropylbenzene	ND	0.000639	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Isopropyltoluene	ND	0.00107	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Methylene chloride	ND	0.000681	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
n-Butylbenzene	ND	0.00113	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Hexanone	ND	0.000573	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
n-Propylbenzene	ND	0.000516	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
sec-Butylbenzene	0.000964	0.000696	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Styrene	ND	0.000457	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Methyl-2-pentanone	ND	0.00116	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
tert-Butylbenzene	ND	0.000422	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000448	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12 (20-22')
Project: SWMU 10
Collection Date: 5/12/2015 4:00:00 PM
Lab ID: 1505617-002
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000606	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Tetrachloroethene (PCE)	ND	0.000546	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
trans-1,2-DCE	ND	0.000445	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
trans-1,3-Dichloropropene	ND	0.000360	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,3-Trichlorobenzene	ND	0.00101	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,4-Trichlorobenzene	ND	0.00103	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,1-Trichloroethane	ND	0.000392	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,2-Trichloroethane	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Trichloroethene (TCE)	ND	0.000547	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Trichlorofluoromethane	ND	0.000557	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,3-Trichloropropane	ND	0.000967	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Vinyl chloride	ND	0.000315	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Surr: 1,2-Dichloroethane-d4	89.5	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: 4-Bromofluorobenzene	93.4	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: Dibromofluoromethane	92.7	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	2.4	0.90	3.6	J	mg/Kg-dr	1	5/14/2015 4:54:30 PM	R26209
Surr: BFB	106	0	67.4-150		%REC	1	5/14/2015 4:54:30 PM	R26209

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 9:15:00 AM
Lab ID: 1505617-003 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.7		mg/Kg-dr	1	5/15/2015 10:18:19 AM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 10:18:19 AM	19228
Surr: DNOP	109	0	57.9-140		%REC	1	5/15/2015 10:18:19 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	6.0	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0030	0.034		mg/Kg-dr	1	5/31/2015 10:46:31 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Arsenic	1.3	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Barium	260	0.032	0.11		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Beryllium	0.71	0.0080	0.16		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Chromium	7.8	0.065	0.33		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Cobalt	4.0	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Iron	15000	65	270		mg/Kg-dr	100	5/20/2015 10:39:17 AM	19280
Lead	2.9	0.12	0.27		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Manganese	390	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:51:54 PM	19280
Nickel	6.5	0.14	0.54		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Vanadium	19	0.036	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Zinc	13	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Acenaphthylene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Aniline	ND	0.092	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Anthracene	ND	0.090	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Azobenzene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benz(a)anthracene	ND	0.083	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(a)pyrene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzoic acid	ND	0.060	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzyl alcohol	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 9:15:00 AM
Lab ID: 1505617-003
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.081	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Bromophenyl phenyl ether	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Butyl benzyl phthalate	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Carbazole	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chloro-3-methylphenol	ND	0.10	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chloroaniline	ND	0.098	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Chloronaphthalene	ND	0.11	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Chlorophenol	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Chrysene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Di-n-butyl phthalate	ND	0.12	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Di-n-octyl phthalate	ND	0.12	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dibenz(a,h)anthracene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dibenzofuran	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,3-Dichlorobenzene	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
3,3´-Dichlorobenzidine	ND	0.081	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Diethyl phthalate	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dimethyl phthalate	ND	0.097	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dichlorophenol	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dimethylphenol	ND	0.083	0.32		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.057	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dinitrophenol	ND	0.044	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dinitrotoluene	ND	0.094	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Fluoranthene	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Fluorene	ND	0.14	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorobenzene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorobutadiene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorocyclopentadiene	ND	0.073	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachloroethane	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Isophorone	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1-Methylnaphthalene	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Methylnaphthalene	ND	0.096	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Methylphenol	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 9:15:00 AM
Lab ID: 1505617-003
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
N-Nitrosodiphenylamine	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Naphthalene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Nitroaniline	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
3-Nitroaniline	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Nitroaniline	ND	0.095	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Nitrobenzene	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Nitrophenol	ND	0.095	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Nitrophenol	ND	0.091	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pentachlorophenol	ND	0.066	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Phenanthrene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Phenol	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pyrene	ND	0.14	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pyridine	ND	0.089	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4,5-Trichlorophenol	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4,6-Trichlorophenol	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Surr: 2-Fluorophenol	66.4		26.4-129		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: Phenol-d5	70.0		34.8-118		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 2,4,6-Tribromophenol	74.7		26.8-128		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: Nitrobenzene-d5	70.4		35.8-124		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 2-Fluorobiphenyl	69.0		24.5-139		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 4-Terphenyl-d14	67.3		29.4-129		%REC	1	5/19/2015 10:44:10 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.000909	0.000561	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Toluene	0.000885	0.000259	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Ethylbenzene	ND	0.000419	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Xylenes, Total	ND	0.00149	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00104	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,4-Trimethylbenzene	ND	0.000651	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3,5-Trimethylbenzene	ND	0.000437	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000668	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000298	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Naphthalene	ND	0.000814	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1-Methylnaphthalene	ND	0.000979	0.00498		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Methylnaphthalene	ND	0.000974	0.00498		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Acetone	0.0451	0.00156	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromobenzene	ND	0.000693	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 9:15:00 AM
Lab ID: 1505617-003
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000337	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromoform	ND	0.000646	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromomethane	ND	0.00147	0.00374		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Butanone	0.00424	0.000798	0.0125	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Carbon tetrachloride	ND	0.000451	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chlorobenzene	ND	0.000253	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloroethane	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloroform	ND	0.000513	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloromethane	ND	0.000294	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Chlorotoluene	ND	0.000486	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Carbon disulfide	ND	0.00113	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Chlorotoluene	ND	0.000480	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
cis-1,2-DCE	ND	0.000659	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
cis-1,3-Dichloropropene	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000732	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dibromochloromethane	ND	0.000279	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dibromomethane	ND	0.00141	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichlorobenzene	ND	0.000553	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3-Dichlorobenzene	ND	0.000422	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,4-Dichlorobenzene	ND	0.000391	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dichlorodifluoromethane	ND	0.00102	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloroethane	ND	0.000582	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloroethene	ND	0.000416	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichloropropane	ND	0.000532	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3-Dichloropropane	ND	0.000388	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2,2-Dichloropropane	ND	0.000433	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloropropene	ND	0.000456	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Hexachlorobutadiene	ND	0.000503	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Isopropylbenzene	ND	0.000578	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Isopropyltoluene	ND	0.000967	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Methylene chloride	0.000685	0.000616	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
n-Butylbenzene	ND	0.00102	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Hexanone	0.000962	0.000518	0.0125	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
n-Propylbenzene	ND	0.000466	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
sec-Butylbenzene	ND	0.000629	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Styrene	ND	0.000413	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Methyl-2-pentanone	ND	0.00105	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
tert-Butylbenzene	ND	0.000382	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000405	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 9:15:00 AM
Lab ID: 1505617-003
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000548	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Tetrachloroethene (PCE)	ND	0.000494	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
trans-1,2-DCE	ND	0.000403	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
trans-1,3-Dichloropropene	ND	0.000326	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,3-Trichlorobenzene	ND	0.000912	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,4-Trichlorobenzene	ND	0.000934	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,1-Trichloroethane	ND	0.000354	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,2-Trichloroethane	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Trichloroethene (TCE)	ND	0.000495	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Trichlorofluoromethane	ND	0.000503	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,3-Trichloropropane	ND	0.000875	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Vinyl chloride	ND	0.000285	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Surr: 1,2-Dichloroethane-d4	91.4	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: 4-Bromofluorobenzene	109	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: Dibromofluoromethane	92.4	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: Toluene-d8	92.5	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.81	3.2		mg/Kg-dr	1	5/14/2015 5:23:16 PM	R26209
Surr: BFB	114	0	67.4-150		%REC	1	5/14/2015 5:23:16 PM	R26209

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 9:25:00 AM
Lab ID: 1505617-004 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	2300	55	100		mg/Kg-dr	10	5/15/2015 10:39:26 AM	19228
Motor Oil Range Organics (MRO)	ND	500	500		mg/Kg-dr	10	5/15/2015 10:39:26 AM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 10:39:26 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0034	0.039		mg/Kg-dr	1	5/31/2015 10:48:18 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	6.0		mg/Kg-dr	2	5/20/2015 12:54:24 PM	19280
Arsenic	1.3	0.35	3.0	J	mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Barium	200	0.036	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Beryllium	1.2	0.0088	0.18		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Cobalt	5.9	0.045	0.36		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Iron	18000	72	300		mg/Kg-dr	100	5/20/2015 10:44:51 AM	19280
Lead	5.2	0.13	0.30		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Manganese	190	0.070	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Nickel	11	0.15	0.60		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Vanadium	19	0.040	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Zinc	17	0.77	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 9:25:00 AM
Lab ID: 1505617-004
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
3,3´-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Fluorene	1.1	0.16	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1-Methylnaphthalene	12	0.55	1.2		mg/Kg-dr	5	5/21/2015 5:50:19 PM	19270
2-Methylnaphthalene	21	0.54	1.2		mg/Kg-dr	5	5/21/2015 5:50:19 PM	19270
2-Methylphenol	2.2	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
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Project: SWMU 10
Collection Date: 5/13/2015 9:25:00 AM
Lab ID: 1505617-004
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.79	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Naphthalene	3.9	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Phenanthrene	2.3	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Phenol	0.91	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Surr: 2-Fluorophenol	61.6		26.4-129		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: Phenol-d5	61.3		34.8-118		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 2,4,6-Tribromophenol	29.6		26.8-128		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: Nitrobenzene-d5	69.1		35.8-124		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 2-Fluorobiphenyl	57.5		24.5-139		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 4-Terphenyl-d14	58.2		29.4-129		%REC	1	5/21/2015 5:22:36 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0050	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Toluene	0.11	0.0040	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Ethylbenzene	1.3	0.0031	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0048	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,4-Trimethylbenzene	5.2	0.017	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,3,5-Trimethylbenzene	1.9	0.022	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0027	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Naphthalene	3.8	0.080	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1-Methylnaphthalene	11	0.20	1.3		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
2-Methylnaphthalene	20	0.22	1.3		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Acetone	ND	0.025	0.51		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Bromobenzene	ND	0.025	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Bromodichloromethane	ND	0.0028	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 9:25:00 AM
Lab ID: 1505617-004
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.027	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Bromomethane	0.023	0.0065	0.10	J	mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2-Butanone	ND	0.022	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Carbon disulfide	ND	0.024	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Carbon tetrachloride	ND	0.0033	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chlorobenzene	ND	0.0026	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloroethane	ND	0.026	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloroform	ND	0.0035	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloromethane	ND	0.0039	0.10		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2-Chlorotoluene	ND	0.038	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Chlorotoluene	ND	0.026	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
cis-1,2-DCE	ND	0.0043	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
cis-1,3-Dichloropropene	ND	0.0023	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.058	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Dibromochloromethane	ND	0.0025	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Dibromomethane	ND	0.0036	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dichlorobenzene	ND	0.020	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,3-Dichlorobenzene	ND	0.040	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,4-Dichlorobenzene	ND	0.042	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Dichlorodifluoromethane	ND	0.0085	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloroethane	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloroethene	ND	0.0023	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dichloropropane	ND	0.0019	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,3-Dichloropropane	ND	0.0046	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2,2-Dichloropropane	ND	0.0049	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloropropene	ND	0.0050	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Hexachlorobutadiene	ND	0.047	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
2-Hexanone	ND	0.0083	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Isopropylbenzene	0.67	0.028	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Isopropyltoluene	0.37	0.024	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Methyl-2-pentanone	ND	0.0059	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Methylene chloride	ND	0.013	0.10		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
n-Butylbenzene	0.58	0.029	1.0	J	mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
n-Propylbenzene	0.86	0.025	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
sec-Butylbenzene	0.36	0.048	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Styrene	ND	0.0062	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
tert-Butylbenzene	ND	0.039	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.0028	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.041	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221

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Matrix: SOIL
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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0029	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
trans-1,2-DCE	ND	0.0022	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
trans-1,3-Dichloropropene	ND	0.0061	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,3-Trichlorobenzene	ND	0.072	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,2,4-Trichlorobenzene	ND	0.062	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,1,1-Trichloroethane	ND	0.0051	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1,2-Trichloroethane	ND	0.0041	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Trichloroethene (TCE)	ND	0.0033	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Trichlorofluoromethane	ND	0.010	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,3-Trichloropropane	ND	0.057	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Vinyl chloride	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Xylenes, Total	5.0	0.0093	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Surr: Dibromofluoromethane	92.8		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: Toluene-d8	83.2		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: 4-Bromofluorobenzene	73.0		70-130		%REC	10	5/15/2015 12:48:52 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	320	8.5	34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Surr: BFB	101	0	67.4-150		%REC	10	5/15/2015 12:48:52 PM	R26221

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-13 (18-20')
Project: SWMU 10
Collection Date: 5/13/2015 9:35:00 AM
Lab ID: 1505617-005 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/15/2015 11:00:42 AM	19228
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/15/2015 11:00:42 AM	19228
Surr: DNOP	101	0	57.9-140		%REC	1	5/15/2015 11:00:42 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.1	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/31/2015 10:50:07 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.8	5.4		mg/Kg-dr	2	5/20/2015 12:57:00 PM	19280
Arsenic	1.2	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Barium	110	0.032	0.11		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Beryllium	1.1	0.0080	0.16		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Chromium	15	0.065	0.32		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Cobalt	6.3	0.041	0.32		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Iron	23000	65	270		mg/Kg-dr	100	5/20/2015 10:46:12 AM	19280
Lead	2.3	0.12	0.27		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Manganese	430	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:57:00 PM	19280
Nickel	15	0.14	0.54		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Vanadium	15	0.036	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Zinc	21	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Aniline	ND	0.095	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzoic acid	ND	0.062	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzyl alcohol	ND	0.097	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

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Project: SWMU 10
Collection Date: 5/13/2015 9:35:00 AM
Lab ID: 1505617-005
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Chloronaphthalene	ND	0.12	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,3-Dichlorobenzene	ND	0.097	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
3,3´-Dichlorobenzidine	ND	0.084	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270

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Lab ID: 1505617-005
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Nitroaniline	ND	0.098	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Nitrophenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Nitrophenol	ND	0.094	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pentachlorophenol	ND	0.068	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Phenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Surr: 2-Fluorophenol	64.5		26.4-129		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: Phenol-d5	67.6		34.8-118		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 2,4,6-Tribromophenol	67.0		26.8-128		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: Nitrobenzene-d5	67.1		35.8-124		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 2-Fluorobiphenyl	65.2		24.5-139		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 4-Terphenyl-d14	58.3		29.4-129		%REC	1	5/19/2015 11:12:10 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0194	0.000509	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Toluene	0.00936	0.000235	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Ethylbenzene	0.00216	0.000380	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Xylenes, Total	0.00769	0.00135	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000947	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,4-Trimethylbenzene	0.00230	0.000590	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3,5-Trimethylbenzene	0.00154	0.000396	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000605	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000270	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Naphthalene	0.000791	0.000738	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1-Methylnaphthalene	ND	0.000887	0.00452		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Methylnaphthalene	ND	0.000883	0.00452		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Acetone	0.00217	0.00141	0.0113	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromobenzene	ND	0.000629	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221

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Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000305	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromoform	ND	0.000585	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromomethane	ND	0.00134	0.00339		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Butanone	0.00181	0.000723	0.0113	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Carbon tetrachloride	ND	0.000409	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chlorobenzene	ND	0.000229	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloroethane	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloroform	ND	0.000465	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloromethane	ND	0.000266	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Chlorotoluene	ND	0.000441	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Carbon disulfide	ND	0.00102	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Chlorotoluene	ND	0.000435	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
cis-1,2-DCE	ND	0.000598	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
cis-1,3-Dichloropropene	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000664	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dibromochloromethane	ND	0.000253	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dibromomethane	ND	0.00128	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichlorobenzene	ND	0.000501	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3-Dichlorobenzene	ND	0.000383	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,4-Dichlorobenzene	ND	0.000355	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dichlorodifluoromethane	ND	0.000922	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloroethane	ND	0.000528	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloroethene	ND	0.000377	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichloropropane	ND	0.000483	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3-Dichloropropane	ND	0.000352	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2,2-Dichloropropane	ND	0.000393	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloropropene	ND	0.000414	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Hexachlorobutadiene	ND	0.000456	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Isopropylbenzene	ND	0.000524	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Isopropyltoluene	ND	0.000877	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Methylene chloride	0.000655	0.000558	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
n-Butylbenzene	ND	0.000928	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Hexanone	ND	0.000470	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
n-Propylbenzene	ND	0.000423	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
sec-Butylbenzene	0.000813	0.000571	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Styrene	ND	0.000374	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Methyl-2-pentanone	ND	0.000954	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
tert-Butylbenzene	ND	0.000346	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000368	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000497	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Tetrachloroethene (PCE)	ND	0.000448	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
trans-1,2-DCE	ND	0.000365	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
trans-1,3-Dichloropropene	ND	0.000295	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,3-Trichlorobenzene	ND	0.000827	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,4-Trichlorobenzene	ND	0.000847	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,1-Trichloroethane	ND	0.000321	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,2-Trichloroethane	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Trichloroethene (TCE)	ND	0.000449	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Trichlorofluoromethane	ND	0.000456	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,3-Trichloropropane	ND	0.000793	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Vinyl chloride	ND	0.000258	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Surr: 1,2-Dichloroethane-d4	90.1	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: 4-Bromofluorobenzene	98.3	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: Dibromofluoromethane	93.3	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: Toluene-d8	86.7	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/14/2015 5:51:59 PM	R26209
Surr: BFB	106	0	67.4-150		%REC	1	5/14/2015 5:51:59 PM	R26209

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 11:15:00 AM
Lab ID: 1505617-006 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/15/2015 11:44:41 AM	19228
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/15/2015 11:44:41 AM	19228
Surr: DNOP	103	0	57.9-140		%REC	1	5/15/2015 11:44:41 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0033	0.038		mg/Kg-dr	1	5/31/2015 10:55:38 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Arsenic	1.1	0.36	3.1	J	mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Barium	52	0.037	0.12		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Beryllium	1.0	0.0091	0.18		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Cadmium	ND	0.034	0.12		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Chromium	9.2	0.074	0.37		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Cobalt	4.7	0.047	0.37		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Iron	15000	74	310		mg/Kg-dr	100	5/20/2015 10:47:34 AM	19280
Lead	5.1	0.13	0.31		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Manganese	490	0.14	0.25		mg/Kg-dr	2	5/20/2015 12:59:37 PM	19280
Nickel	8.7	0.16	0.62		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Selenium	ND	1.9	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Silver	ND	0.037	0.31		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Vanadium	17	0.041	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Zinc	15	0.79	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(g,h,i)perylene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzoic acid	ND	0.068	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 11:15:00 AM
Lab ID: 1505617-006
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.091	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Di-n-butyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
3,3´-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.065	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270

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Lab ID: 1505617-006
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Nitroaniline	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pentachlorophenol	ND	0.074	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Surr: 2-Fluorophenol	87.1		26.4-129		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: Phenol-d5	87.6		34.8-118		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 2,4,6-Tribromophenol	85.4		26.8-128		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: Nitrobenzene-d5	92.0		35.8-124		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 2-Fluorobiphenyl	81.8		24.5-139		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 4-Terphenyl-d14	68.4		29.4-129		%REC	1	5/19/2015 11:39:50 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00119	0.000432	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Toluene	0.00109	0.000199	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Ethylbenzene	0.000345	0.000322	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Xylenes, Total	0.00141	0.00114	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Methyl tert-butyl ether (MTBE)	0.00478	0.000803	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,4-Trimethylbenzene	ND	0.000501	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3,5-Trimethylbenzene	ND	0.000336	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000513	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000229	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Naphthalene	ND	0.000626	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1-Methylnaphthalene	ND	0.000752	0.00383		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Methylnaphthalene	ND	0.000749	0.00383		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Acetone	0.00666	0.00120	0.00958	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromobenzene	ND	0.000533	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221

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Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000259	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromoform	ND	0.000496	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Butanone	ND	0.000614	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Carbon tetrachloride	ND	0.000347	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chlorobenzene	ND	0.000194	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloroform	ND	0.000395	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloromethane	ND	0.000226	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Chlorotoluene	ND	0.000374	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Carbon disulfide	0.000968	0.000867	0.00958	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Chlorotoluene	ND	0.000369	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
cis-1,2-DCE	ND	0.000507	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
cis-1,3-Dichloropropene	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000563	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dibromochloromethane	ND	0.000215	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dibromomethane	ND	0.00109	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichlorobenzene	ND	0.000425	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3-Dichlorobenzene	ND	0.000325	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,4-Dichlorobenzene	ND	0.000301	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dichlorodifluoromethane	ND	0.000782	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloroethane	ND	0.000448	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloroethene	ND	0.000320	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichloropropane	ND	0.000409	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3-Dichloropropane	ND	0.000298	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2,2-Dichloropropane	ND	0.000333	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloropropene	ND	0.000351	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Hexachlorobutadiene	ND	0.000387	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Isopropylbenzene	ND	0.000445	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Isopropyltoluene	ND	0.000744	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Methylene chloride	0.000498	0.000473	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
n-Butylbenzene	ND	0.000787	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Hexanone	ND	0.000399	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
n-Propylbenzene	ND	0.000359	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
sec-Butylbenzene	0.000632	0.000484	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Styrene	ND	0.000318	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Methyl-2-pentanone	ND	0.000809	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
tert-Butylbenzene	ND	0.000294	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000312	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 11:15:00 AM
Lab ID: 1505617-006
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000421	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Tetrachloroethene (PCE)	ND	0.000380	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
trans-1,2-DCE	ND	0.000310	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
trans-1,3-Dichloropropene	ND	0.000251	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,3-Trichlorobenzene	ND	0.000701	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,4-Trichlorobenzene	ND	0.000718	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,1-Trichloroethane	ND	0.000273	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,2-Trichloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Trichloroethene (TCE)	ND	0.000381	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Trichlorofluoromethane	ND	0.000387	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,3-Trichloropropane	ND	0.000673	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Vinyl chloride	ND	0.000219	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: 4-Bromofluorobenzene	95.2	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: Toluene-d8	82.0	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.74	3.0		mg/Kg-dr	1	5/14/2015 6:20:45 PM	R26209
Surr: BFB	110	0	67.4-150		%REC	1	5/14/2015 6:20:45 PM	R26209

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (4-6')
Project: SWMU 10
Collection Date: 5/13/2015 11:25:00 AM
Lab ID: 1505617-007 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.3	9.7		mg/Kg-dr	1	5/15/2015 12:05:56 PM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 12:05:56 PM	19228
Surr: DNOP	107	0	57.9-140		%REC	1	5/15/2015 12:05:56 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 10:58:11 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Arsenic	1.3	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Barium	120	0.034	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Beryllium	1.0	0.0084	0.17		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Chromium	9.1	0.068	0.34		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Cobalt	4.6	0.043	0.34		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Iron	17000	68	280		mg/Kg-dr	100	5/20/2015 10:48:56 AM	19280
Lead	3.7	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Manganese	200	0.066	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Nickel	8.3	0.15	0.57		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Vanadium	15	0.038	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Zinc	15	0.73	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (4-6')
Project: SWMU 10
Collection Date: 5/13/2015 11:25:00 AM
Lab ID: 1505617-007
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-chloroisopropyl)ether	ND	0.090	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
3,3´-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (4-6')
Project: SWMU 10
Collection Date: 5/13/2015 11:25:00 AM
Lab ID: 1505617-007
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Phenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Surr: 2-Fluorophenol	71.9		26.4-129		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: Phenol-d5	76.9		34.8-118		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 2,4,6-Tribromophenol	89.1		26.8-128		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: Nitrobenzene-d5	68.9		35.8-124		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 2-Fluorobiphenyl	82.9		24.5-139		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 4-Terphenyl-d14	78.0		29.4-129		%REC	1	5/20/2015 12:07:52 AM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00144	0.000385	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Toluene	0.00120	0.000178	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Ethylbenzene	0.000367	0.000287	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Xylenes, Total	0.00123	0.00102	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Methyl tert-butyl ether (MTBE)	0.00936	0.000717	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,4-Trimethylbenzene	ND	0.000447	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3,5-Trimethylbenzene	ND	0.000300	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000458	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000204	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Naphthalene	ND	0.000558	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1-Methylnaphthalene	ND	0.000671	0.00342		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Methylnaphthalene	ND	0.000668	0.00342		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Acetone	0.00320	0.00107	0.00854	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromobenzene	ND	0.000475	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (4-6')
Project: SWMU 10
Collection Date: 5/13/2015 11:25:00 AM
Lab ID: 1505617-007
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000231	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromoform	ND	0.000443	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromomethane	ND	0.00101	0.00256		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Butanone	0.00114	0.000547	0.00854	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Carbon tetrachloride	ND	0.000309	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chlorobenzene	ND	0.000173	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloroethane	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloroform	ND	0.000352	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloromethane	ND	0.000201	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Chlorotoluene	ND	0.000334	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Carbon disulfide	ND	0.000773	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Chlorotoluene	ND	0.000329	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
cis-1,2-DCE	ND	0.000452	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
cis-1,3-Dichloropropene	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000502	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dibromochloromethane	ND	0.000192	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dibromomethane	ND	0.000970	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichlorobenzene	ND	0.000379	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3-Dichlorobenzene	ND	0.000290	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,4-Dichlorobenzene	ND	0.000268	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dichlorodifluoromethane	ND	0.000698	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloroethane	ND	0.000399	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloroethene	ND	0.000285	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichloropropane	ND	0.000365	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3-Dichloropropane	ND	0.000266	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2,2-Dichloropropane	ND	0.000297	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloropropene	ND	0.000313	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Hexachlorobutadiene	ND	0.000345	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Isopropylbenzene	ND	0.000396	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Isopropyltoluene	ND	0.000663	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Methylene chloride	ND	0.000422	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
n-Butylbenzene	ND	0.000702	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Hexanone	ND	0.000355	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
n-Propylbenzene	ND	0.000320	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
sec-Butylbenzene	0.000564	0.000432	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Styrene	ND	0.000283	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Methyl-2-pentanone	ND	0.000722	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
tert-Butylbenzene	ND	0.000262	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000278	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (4-6')
Project: SWMU 10
Collection Date: 5/13/2015 11:25:00 AM
Lab ID: 1505617-007
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000376	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Tetrachloroethene (PCE)	ND	0.000339	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
trans-1,2-DCE	ND	0.000276	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
trans-1,3-Dichloropropene	ND	0.000223	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,3-Trichlorobenzene	ND	0.000625	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,4-Trichlorobenzene	ND	0.000640	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,1-Trichloroethane	ND	0.000243	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,2-Trichloroethane	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Trichloroethene (TCE)	ND	0.000340	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Trichlorofluoromethane	ND	0.000345	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,3-Trichloropropane	ND	0.000600	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Vinyl chloride	ND	0.000195	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Surr: 1,2-Dichloroethane-d4	97.3	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: 4-Bromofluorobenzene	92.1	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	2.6	10		mg/Kg-dr	1	5/14/2015 6:49:44 PM	R26209
Surr: BFB	108	0	67.4-150		%REC	1	5/14/2015 6:49:44 PM	R26209

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (18-20')
Project: SWMU 10
Collection Date: 5/13/2015 11:40:00 AM
Lab ID: 1505617-008 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.3	9.5		mg/Kg-dr	1	5/15/2015 12:27:11 PM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 12:27:11 PM	19228
Surr: DNOP	97.7	0	57.9-140		%REC	1	5/15/2015 12:27:11 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	7.9	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0031	0.035		mg/Kg-dr	1	5/31/2015 11:00:02 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.8	5.3		mg/Kg-dr	2	5/20/2015 1:08:38 PM	19280
Arsenic	2.1	0.31	2.7	J	mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Barium	850	0.16	0.53		mg/Kg-dr	5	5/20/2015 1:44:01 PM	19280
Beryllium	1.0	0.0079	0.16		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Chromium	13	0.064	0.32		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Cobalt	7.4	0.040	0.32		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Iron	20000	65	270		mg/Kg-dr	100	5/20/2015 10:50:19 AM	19280
Lead	1.8	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Manganese	980	0.31	0.53		mg/Kg-dr	5	5/20/2015 1:44:01 PM	19280
Nickel	15	0.14	0.53		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Selenium	ND	1.6	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Vanadium	21	0.036	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Zinc	23	0.69	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Aniline	ND	0.094	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Anthracene	ND	0.091	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benz(a)anthracene	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzoic acid	ND	0.061	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzyl alcohol	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (18-20')
Project: SWMU 10
Collection Date: 5/13/2015 11:40:00 AM
Lab ID: 1505617-008
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.082	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chloroaniline	ND	0.10	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Chloronaphthalene	ND	0.12	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Di-n-butyl phthalate	ND	0.12	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Di-n-octyl phthalate	ND	0.12	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,3-Dichlorobenzene	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
3,3´-Dichlorobenzidine	ND	0.083	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dimethyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dichlorophenol	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dimethylphenol	ND	0.085	0.32		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.059	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dinitrophenol	ND	0.045	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dinitrotoluene	ND	0.096	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorocyclopentadiene	ND	0.075	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachloroethane	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Isophorone	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Methylnaphthalene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Methylphenol	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (18-20')
Project: SWMU 10
Collection Date: 5/13/2015 11:40:00 AM
Lab ID: 1505617-008
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
N-Nitrosodiphenylamine	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
3-Nitroaniline	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Nitroaniline	ND	0.097	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Nitrobenzene	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Nitrophenol	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Nitrophenol	ND	0.093	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pentachlorophenol	ND	0.067	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Phenol	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pyridine	ND	0.091	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4,6-Trichlorophenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Surr: 2-Fluorophenol	76.2		26.4-129		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: Phenol-d5	81.1		34.8-118		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 2,4,6-Tribromophenol	76.6		26.8-128		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: Nitrobenzene-d5	74.5		35.8-124		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 2-Fluorobiphenyl	78.0		24.5-139		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 4-Terphenyl-d14	69.6		29.4-129		%REC	1	5/21/2015 1:13:59 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0292	0.000501	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Toluene	0.0204	0.000231	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Ethylbenzene	0.00472	0.000374	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Xylenes, Total	0.0155	0.00133	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000932	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,4-Trimethylbenzene	0.00497	0.000581	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3,5-Trimethylbenzene	0.00318	0.000390	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000595	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000266	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Naphthalene	0.00109	0.000726	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1-Methylnaphthalene	ND	0.000873	0.00444		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Methylnaphthalene	ND	0.000868	0.00444		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Acetone	0.00238	0.00139	0.0111	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromobenzene	ND	0.000618	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (18-20')
Project: SWMU 10
Collection Date: 5/13/2015 11:40:00 AM
Lab ID: 1505617-008
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000300	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromoform	ND	0.000576	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromomethane	ND	0.00131	0.00333		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Butanone	0.00227	0.000712	0.0111	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Carbon tetrachloride	ND	0.000402	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chlorobenzene	ND	0.000225	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloroethane	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloroform	ND	0.000458	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloromethane	ND	0.000262	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Chlorotoluene	ND	0.000434	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Carbon disulfide	ND	0.00101	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Chlorotoluene	ND	0.000428	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
cis-1,2-DCE	ND	0.000588	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
cis-1,3-Dichloropropene	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000653	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dibromochloromethane	ND	0.000249	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dibromomethane	ND	0.00126	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichlorobenzene	ND	0.000493	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3-Dichlorobenzene	ND	0.000377	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,4-Dichlorobenzene	ND	0.000349	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dichlorodifluoromethane	ND	0.000907	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloroethane	ND	0.000519	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloroethene	ND	0.000371	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichloropropane	ND	0.000475	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3-Dichloropropane	ND	0.000346	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2,2-Dichloropropane	ND	0.000386	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloropropene	ND	0.000407	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Hexachlorobutadiene	ND	0.000448	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Isopropylbenzene	0.000689	0.000516	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Isopropyltoluene	ND	0.000862	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Methylene chloride	ND	0.000549	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
n-Butylbenzene	ND	0.000912	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Hexanone	ND	0.000462	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
n-Propylbenzene	0.000889	0.000416	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
sec-Butylbenzene	0.000889	0.000561	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Styrene	ND	0.000368	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Methyl-2-pentanone	ND	0.000938	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
tert-Butylbenzene	ND	0.000341	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000362	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15 (18-20')
Project: SWMU 10
Collection Date: 5/13/2015 11:40:00 AM
Lab ID: 1505617-008
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000489	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Tetrachloroethene (PCE)	ND	0.000440	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
trans-1,2-DCE	ND	0.000359	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
trans-1,3-Dichloropropene	ND	0.000291	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,3-Trichlorobenzene	ND	0.000813	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,4-Trichlorobenzene	ND	0.000833	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,1-Trichloroethane	ND	0.000316	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,2-Trichloroethane	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Trichloroethene (TCE)	ND	0.000442	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Trichlorofluoromethane	ND	0.000449	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,3-Trichloropropane	ND	0.000780	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Vinyl chloride	ND	0.000254	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Surr: 1,2-Dichloroethane-d4	88.8	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: Dibromofluoromethane	92.9	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: Toluene-d8	84.5	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.94	3.8		mg/Kg-dr	1	5/14/2015 7:18:41 PM	R26209
Surr: BFB	109	0	67.4-150		%REC	1	5/14/2015 7:18:41 PM	R26209

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-17 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 1:45:00 PM
Lab ID: 1505617-009 **Matrix:** SOIL **Received Date:** 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	7800	530	960		mg/Kg-dr	100	5/15/2015 1:39:22 PM	19228
Motor Oil Range Organics (MRO)	ND	4800	4800		mg/Kg-dr	100	5/15/2015 1:39:22 PM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	100	5/15/2015 1:39:22 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/31/2015 11:01:52 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	5.8		mg/Kg-dr	2	5/20/2015 1:11:14 PM	19280
Arsenic	1.5	0.34	2.9	J	mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Barium	200	0.035	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Beryllium	1.0	0.0086	0.17		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Cobalt	5.3	0.044	0.35		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Iron	16000	70	290		mg/Kg-dr	100	5/20/2015 10:51:42 AM	19280
Lead	4.4	0.13	0.29		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Manganese	210	0.068	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Nickel	9.6	0.15	0.58		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Zinc	17	0.75	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benz(a)anthracene	ND	0.90	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-17 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 1:45:00 PM
Lab ID: 1505617-009
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Chloronaphthalene	ND	1.2	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
3,3´-Dichlorobenzidine	ND	0.88	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dimethyl phthalate	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dimethylphenol	36	0.90	3.4		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Fluorene	7.1	1.6	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1-Methylnaphthalene	76	5.3	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
2-Methylnaphthalene	130	5.2	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
2-Methylphenol	56	5.7	23		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-17 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 1:45:00 PM
Lab ID: 1505617-009
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	100	5.9	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Naphthalene	24	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Nitrophenol	ND	0.98	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Phenanthrene	15	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Phenol	52	5.1	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Pyridine	ND	0.96	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 6:18:13 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	1.9	0.094	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Toluene	34	0.076	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Ethylbenzene	11	0.058	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.090	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,4-Trimethylbenzene	27	0.032	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3,5-Trimethylbenzene	10	0.042	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.051	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Naphthalene	20	0.15	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1-Methylnaphthalene	48	0.38	2.5		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Methylnaphthalene	87	2.1	13		mg/Kg-dr	100	5/15/2015 1:17:42 PM	R26221
Acetone	ND	0.47	9.5		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromobenzene	ND	0.047	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromodichloromethane	ND	0.052	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-17 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 1:45:00 PM
Lab ID: 1505617-009
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.051	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromomethane	ND	0.12	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Butanone	ND	0.41	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Carbon disulfide	ND	0.46	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Carbon tetrachloride	ND	0.062	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chlorobenzene	ND	0.049	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloroethane	ND	0.49	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloroform	ND	0.066	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloromethane	ND	0.073	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Chlorotoluene	ND	0.072	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Chlorotoluene	ND	0.048	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
cis-1,2-DCE	ND	0.080	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
cis-1,3-Dichloropropene	ND	0.044	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dibromochloromethane	ND	0.048	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dibromomethane	ND	0.067	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichlorobenzene	ND	0.038	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3-Dichlorobenzene	ND	0.075	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,4-Dichlorobenzene	ND	0.079	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dichlorodifluoromethane	ND	0.16	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloroethane	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloroethene	ND	0.044	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichloropropane	ND	0.035	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3-Dichloropropane	ND	0.087	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2,2-Dichloropropane	ND	0.092	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloropropene	ND	0.095	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Hexachlorobutadiene	ND	0.088	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Hexanone	ND	0.16	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Isopropylbenzene	3.1	0.054	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Isopropyltoluene	1.6	0.045	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Methyl-2-pentanone	ND	0.11	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Methylene chloride	ND	0.25	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
n-Butylbenzene	2.8	0.055	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
n-Propylbenzene	5.2	0.047	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
sec-Butylbenzene	1.8	0.090	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Styrene	ND	0.12	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
tert-Butylbenzene	ND	0.073	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.052	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.077	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-17 (6-8')
Project: SWMU 10
Collection Date: 5/13/2015 1:45:00 PM
Lab ID: 1505617-009
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.055	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
trans-1,2-DCE	ND	0.041	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
trans-1,3-Dichloropropene	ND	0.11	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,4-Trichlorobenzene	ND	0.12	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,1-Trichloroethane	ND	0.096	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,2-Trichloroethane	ND	0.076	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Trichloroethene (TCE)	ND	0.062	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Trichlorofluoromethane	ND	0.19	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Vinyl chloride	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Xylenes, Total	86	0.18	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Surr: Dibromofluoromethane	90.0		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: 1,2-Dichloroethane-d4	99.1		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: Toluene-d8	99.9		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: 4-Bromofluorobenzene	102		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	1300	16	63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Surr: BFB	106	0	67.4-150		%REC	20	5/15/2015 2:15:21 PM	R26221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP04
Project: SWMU 10
Collection Date: 5/13/2015
Lab ID: 1505617-010
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3000	54	98		mg/Kg-dr	10	5/15/2015 2:00:39 PM	19228
Motor Oil Range Organics (MRO)	ND	490	490		mg/Kg-dr	10	5/15/2015 2:00:39 PM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 2:00:39 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 11:03:43 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Arsenic	1.1	0.34	2.9	J	mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Barium	160	0.035	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Cobalt	5.4	0.044	0.35		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Iron	16000	70	290		mg/Kg-dr	100	5/20/2015 10:53:06 AM	19280
Lead	5.3	0.13	0.29		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Manganese	200	0.068	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Nickel	9.5	0.15	0.58		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Zinc	17	0.75	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benz(a)anthracene	ND	0.89	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
R	RPD outside accepted recovery limits
RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP04
Project: SWMU 10
Collection Date: 5/13/2015
Lab ID: 1505617-010
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
3,3´-Dichlorobenzidine	ND	0.87	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dimethyl phthalate	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dimethylphenol	18	0.89	3.4		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Fluorene	3.2	1.5	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1-Methylnaphthalene	28	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Methylnaphthalene	45	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Methylphenol	29	1.1	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP04
Project: SWMU 10
Collection Date: 5/13/2015
Lab ID: 1505617-010
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	60	5.9	11		mg/Kg-dr	5	5/21/2015 7:41:29 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Naphthalene	8.8	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Nitrophenol	ND	0.98	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Phenanthrene	6.0	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Phenol	26	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pyridine	ND	0.95	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 7:13:45 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	1.2	0.095	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Toluene	23	0.076	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Ethylbenzene	8.3	0.059	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.091	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,4-Trimethylbenzene	17	0.032	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3,5-Trimethylbenzene	6.2	0.042	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.051	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Naphthalene	13	0.15	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1-Methylnaphthalene	31	0.39	2.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Methylnaphthalene	60	0.42	2.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Acetone	ND	0.48	9.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromobenzene	ND	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromodichloromethane	ND	0.053	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP04
Project: SWMU 10
Collection Date: 5/13/2015
Lab ID: 1505617-010
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.052	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromomethane	ND	0.12	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Butanone	ND	0.41	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Carbon disulfide	ND	0.46	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Carbon tetrachloride	ND	0.063	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chlorobenzene	ND	0.049	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloroethane	ND	0.50	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloroform	ND	0.067	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloromethane	ND	0.074	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Chlorotoluene	ND	0.073	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Chlorotoluene	ND	0.049	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
cis-1,2-DCE	ND	0.081	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
cis-1,3-Dichloropropene	ND	0.045	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dibromochloromethane	ND	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dibromomethane	ND	0.068	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichlorobenzene	ND	0.039	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3-Dichlorobenzene	ND	0.076	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,4-Dichlorobenzene	ND	0.080	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dichlorodifluoromethane	ND	0.16	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloroethane	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloroethene	ND	0.044	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichloropropane	ND	0.036	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3-Dichloropropane	ND	0.088	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2,2-Dichloropropane	ND	0.093	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloropropene	ND	0.096	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Hexachlorobutadiene	ND	0.089	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Hexanone	ND	0.16	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Isopropylbenzene	2.3	0.054	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Isopropyltoluene	1.1	0.046	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Methyl-2-pentanone	ND	0.11	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Methylene chloride	ND	0.26	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
n-Butylbenzene	1.9	0.055	1.9	J	mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
n-Propylbenzene	3.3	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
sec-Butylbenzene	1.0	0.091	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Styrene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
tert-Butylbenzene	ND	0.074	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.053	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.078	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP04
Project: SWMU 10
Collection Date: 5/13/2015
Lab ID: 1505617-010
Matrix: SOIL
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.056	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
trans-1,2-DCE	ND	0.042	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
trans-1,3-Dichloropropene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,4-Trichlorobenzene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,1-Trichloroethane	ND	0.097	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,2-Trichloroethane	ND	0.077	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Trichloroethene (TCE)	ND	0.063	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Trichlorofluoromethane	ND	0.19	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Vinyl chloride	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Xylenes, Total	65	0.18	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Surr: Dibromofluoromethane	98.2		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: 1,2-Dichloroethane-d4	101		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: Toluene-d8	103		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: 4-Bromofluorobenzene	78.3		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	1100	16	64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Surr: BFB	99.4	0	67.4-150		%REC	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505617-011
Matrix: MEOH BLAN
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0074	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Toluene	ND	0.0060	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Ethylbenzene	ND	0.0046	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0071	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,4-Trimethylbenzene	0.0058	0.0025	0.050	J	mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3,5-Trimethylbenzene	ND	0.0033	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0040	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Naphthalene	ND	0.012	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1-Methylnaphthalene	ND	0.030	0.20		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Methylnaphthalene	ND	0.033	0.20		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Acetone	ND	0.037	0.75		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromobenzene	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromodichloromethane	ND	0.0041	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromoform	ND	0.0040	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromomethane	0.031	0.0097	0.15	J	mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Butanone	ND	0.032	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Carbon disulfide	ND	0.036	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Carbon tetrachloride	ND	0.0049	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chlorobenzene	ND	0.0038	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloroethane	ND	0.039	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloroform	ND	0.0052	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloromethane	ND	0.0058	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Chlorotoluene	ND	0.0057	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Chlorotoluene	ND	0.0038	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
cis-1,2-DCE	ND	0.0063	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
cis-1,3-Dichloropropene	ND	0.0035	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0086	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dibromochloromethane	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dibromomethane	ND	0.0053	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichlorobenzene	ND	0.0030	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3-Dichlorobenzene	ND	0.0059	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dichlorodifluoromethane	ND	0.013	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1-Dichloroethane	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1-Dichloroethene	ND	0.0034	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichloropropane	ND	0.0028	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3-Dichloropropane	ND	0.0069	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2,2-Dichloropropane	ND	0.0073	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505617-011
Matrix: MEOH BLAN
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.0074	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Hexachlorobutadiene	ND	0.0069	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Hexanone	ND	0.012	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Isopropylbenzene	ND	0.0042	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Isopropyltoluene	ND	0.0036	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Methyl-2-pentanone	ND	0.0087	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Methylene chloride	ND	0.020	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
n-Butylbenzene	ND	0.0043	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
n-Propylbenzene	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
sec-Butylbenzene	ND	0.0071	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Styrene	ND	0.0092	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
tert-Butylbenzene	ND	0.0057	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0041	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0061	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Tetrachloroethene (PCE)	ND	0.0043	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
trans-1,2-DCE	ND	0.0032	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
trans-1,3-Dichloropropene	ND	0.0090	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,3-Trichlorobenzene	ND	0.011	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0092	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,1-Trichloroethane	ND	0.0076	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,2-Trichloroethane	ND	0.0060	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Trichloroethene (TCE)	ND	0.0049	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Trichlorofluoromethane	ND	0.015	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Vinyl chloride	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Xylenes, Total	ND	0.014	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: 1,2-Dichloroethane-d4	102		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: Toluene-d8	89.8		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: 4-Bromofluorobenzene	101		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	1.3	5.0		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Surr: BFB	114	0	67.4-150		%REC	1	5/14/2015 7:47:32 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-01

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-001C SWMU 10-12 6-8FT

Project # :

Collected By :
Collection Date : 05/12/15 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	46.		mV	2580 B-2011	05/23/15	1
pH	7.4	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-01 (PH) - 7.4 at 22.2c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-02

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-002C SWMU 10-12 20-22FT

Project # :

Collected By :
Collection Date : 05/12/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	37.		mV	2580 B-2011	05/23/15	1
pH	8.4	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-02 (PH) - 8.4 at 22.3c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-03

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-003C SWMU 10-13 2-4FT

Project # :

Collected By :
Collection Date : 05/13/15 09:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	63.		mV	2580 B-2011	05/23/15	1
pH	7.4	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-03 (PH) - 7.4 at 22.3c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-04

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-004C SWMU 10-13 6-8FT

Project # :

Collected By :
Collection Date : 05/13/15 09:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	55.		mV	2580 B-2011	05/23/15	1
pH	8.0	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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L765575-04 (PH) - 8.0 at 21.8c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-05

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-005C SWMU 10-13 18-20FT

Project # :

Collected By :
Collection Date : 05/13/15 09:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	30.		mV	2580 B-2011	05/23/15	1
pH	8.7	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-05 (PH) - 8.7 at 21.8c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
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Albuquerque, NM 87109

ESC Sample # : L765575-06

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-006C SWMU 10-15 2-4FT

Project # :

Collected By :
Collection Date : 05/13/15 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	44.		mV	2580 B-2011	05/23/15	1
pH	7.6	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-06 (PH) - 7.6 at 21.7c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-07

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-007C SWMU 10-15 4-6FT

Project # :

Collected By :
Collection Date : 05/13/15 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-07 (PH) - 8.1 at 21.7c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-08

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-008C SWMU 10-15 18-20FT

Project # :

Collected By :
Collection Date : 05/13/15 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	23.		mV	2580 B-2011	05/23/15	1
pH	8.8	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-08 (PH) - 8.8 at 21.8c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-09

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-009C SWMU 10-17 6-8FT

Project # :

Collected By :
Collection Date : 05/13/15 13:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-09 (PH) - 8.1 at 22.2c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
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Albuquerque, NM 87109

ESC Sample # : L765575-10

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-010C SWMU 10 DUP04

Project # :

Collected By :
Collection Date : 05/13/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-10 (PH) - 8.1 at 22.0c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765575

May 26, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG789461	05/19/15 03:43
Cyanide	< .25	mg/kg			WG789989	05/21/15 08:51
Cyanide	< .25	mg/kg			WG790306	05/26/15 09:43

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L765575-05	WG789461
pH	su	7.40	7.40	0.406	1	L765575-01	WG789463
pH	su	8.50	8.50	0.118	1	L765657-06	WG789463
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-01	WG789989
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-03	WG789989
ORP	mV	54.0	56.0	3.64	20	L765419-02	WG790617
ORP	mV	46.0	45.0	2.20	20	L766227-03	WG790617
Cyanide	mg/kg	0.0	0.0	0.0	20	L765924-01	WG790306
Cyanide	mg/kg	0.0	0.0	0.0	20	L766617-01	WG790306

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	59.8	64.6	108.	80-120	WG789461
pH	su	7.84	7.79	99.4	98.3-101.7	WG789463
Cyanide	mg/kg	101	117.	116.	50-150	WG789989
ORP	mV	100	101.	101.	90-110	WG790617
Cyanide	mg/kg	101	124.	123.	50-150	WG790306

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/kg	64.4	64.6	108.	80-120	0.310	20	WG789461
pH	su	7.79	7.79	99.0	98.3-101.7	0.0	20	WG789463
Cyanide	mg/kg	125.	117.	124.	50-150	6.61	20	WG789989
ORP	mV	100.	101.	100.	90-110	0.995	20	WG790617

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L765575

May 26, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/kg	122.	124.	121.	50-150	1.63	20	WG790306

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.7	0.0	20	98.0	75-125	L765575-05	WG789461
Cyanide	mg/kg	3.32	0.0	3.33	100.	80-120	L765575-02	WG789989
Cyanide	mg/kg	2.97	0.0	3.33	89.0	80-120	L765924-04	WG790306

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.9	19.7	99.5	75-125	1.01	20	L765575-05	WG789461
Cyanide	mg/kg	3.47	3.32	104.	80-120	4.42	20	L765575-02	WG789989
Cyanide	mg/kg	3.18	2.97	95.5	80-120	6.83	20	L765924-04	WG790306

Batch number /Run number / Sample number cross reference

WG789463: R3037588: L765575-01 02 03 04 05 06 07 08 09 10
WG789461: R3037738: L765575-01 02 03 04 05 06 07 08 09 10
WG789989: R3038429: L765575-01 02 03 04 05 06
WG790617: R3039123: L765575-01 02 03 04 05 06 07 08 09 10
WG790306: R3039168: L765575-07 08 09 10

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19228**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19228**	RunNo: **26217**
Prep Date: **5/14/2015**	Analysis Date: **5/15/2015**	SeqNo: **777964** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		118	57.9	140			

Sample ID **LCS-19228**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19228**	RunNo: **26217**
Prep Date: **5/14/2015**	Analysis Date: **5/15/2015**	SeqNo: **777965** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	67.8	130			
Surr: DNOP	5.6		5.000		112	57.9	140			

Sample ID **1505617-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-12 (6-8')**	Batch ID: **19228**	RunNo: **26217**
Prep Date: **5/14/2015**	Analysis Date: **5/15/2015**	SeqNo: **778449** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.9	49.55	0	84.0	42.3	146			
Surr: DNOP	4.6		4.955		93.3	57.9	140			

Sample ID **1505617-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-12 (6-8')**	Batch ID: **19228**	RunNo: **26217**
Prep Date: **5/14/2015**	Analysis Date: **5/15/2015**	SeqNo: **778487** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	49.80	0	86.5	42.3	146	3.41	28.9	
Surr: DNOP	4.7		4.980		94.7	57.9	140	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0085	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.023	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	118	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.2	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0072	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.019	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778723** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	119	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.1	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19270**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19475**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID:	**19475**	RunNo:	**26535**				
Prep Date:	**5/30/2015**	Analysis Date:	**5/31/2015**	SeqNo:	**788620**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19475**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID:	**19475**	RunNo:	**26535**				
Prep Date:	**5/30/2015**	Analysis Date:	**5/31/2015**	SeqNo:	**788621**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	97.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19280**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**19280**	RunNo:	**26309**
Prep Date:	**5/18/2015**	Analysis Date:	**5/20/2015**	SeqNo:	**781615** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	**LCS-19280**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**19280**	RunNo:	**26309**
Prep Date:	**5/18/2015**	Analysis Date:	**5/20/2015**	SeqNo:	**781616** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	27	2.5	25.00	0	109	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	26	0.10	25.00	0	102	80	120			
Beryllium	27	0.15	25.00	0	106	80	120			
Cadmium	26	0.10	25.00	0	102	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	101	80	120			
Iron	27	2.5	25.00	0	106	80	120			
Lead	25	0.25	25.00	0	100	80	120			
Manganese	26	0.10	25.00	0	102	80	120			
Nickel	25	0.50	25.00	0	101	80	120			
Selenium	26	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		98.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777631** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.6	79.9	135			
Surr: BFB	510		500.0		103	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778746** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.2	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778747** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505617** RcptNo: **1**

Received by/date: CS 05/13/15

Logged By: **Lindsay Mangin** **5/13/2015 4:23:00 PM**

Completed By: **Lindsay Mangin** **5/14/2015 7:35:30 AM**

Reviewed By: A 05/14/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505617	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)	Air Bubbles (Y or N)
5.12.15	1545	SOIL	SWMU 10-12(6-8')	2 JARS	—	-001			✓							✓	✓	✓	
				2 VIALS	MEOH	-001										✓			
				2 VIALS	SOBI	-001										✓			
	1600		SWMU 10-12 (20-22')	2 JARS	—	-002			✓							✓	✓	✓	
				2 VIALS	MEOH	-002										✓			
				2 VIALS	SOBI	-002										✓			
5.13.15	0915		SWMU 10-13 (2-4')	2 JARS	—	-003			✓							✓	✓	✓	
				2 VIALS	MEOH	-003										✓			
				2 VIALS	SOBI	-003										✓			
	0925		SWMU 10-13(6-8')	2 JARS	—	-004			✓							✓	✓	✓	
				2 VIALS	MEOH	-004										✓			
				2 VIALS	SOBI	-004										✓			

Date: 5.13.15 Time: 1354 Relinquished by: — Received by: — Date Time: 5-13-15 1354
Date: 5/13/15 Time: 1623 Relinquished by: — Received by: Celina Sena Date Time: 05/13/15 1623

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505617	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5-13-15	0935	SOIL	SWMU 10-13(18-20')	2 JARS	—	-005			✓							✓	✓	✓			
				2 VIALS	MEOH	-005											4				
				2 VIALS	SOB1	-005											4				
	1115	SOIL	SWMU 10-15(2-4')	2 JARS	—	-006			✓							✓	✓	✓			
				2 VIALS	MEOH	-006											4				
				2 VIALS	SOB1	-006											4				
	1125		SWMU 10-15(4-6')	2 JARS	—	-007			✓							✓	✓	✓			
				2 VIALS	MEOH	-007											4				
				2 VIALS	SOB1	-007											4				
	1140		SWMU 10-15(18-20')	2 JARS	—	-008			✓							✓	✓	✓			
				2 VIALS	MEOH	-008											4				
				2 VIALS	SOB1	-008											4				

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.13.15	1354			5-13-15	1354
5/13/15	1623		Celina Sena	05/13/15	1623

Remarks:

AT 05/14/15 pmTB

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ~~☐~~ Yes ☐ No
Sample Temperature: 1.0°C

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Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505617	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.13.15	1345	SOIL	SWMU 10-17(6-8')	2J	—	-009			✓							✓	✓	✓			
				2V	MEOH	-009										✓					
				2V	SOBI	-009										✓					
			SWMU 10 DUP04	2J	—	-010			✓							✓	✓	✓			
				2V	MEOH	-010										✓					
				2V	SOBI	-010										✓					
			MEOH BLANK	2V	MEOH	-011										✓					

Remarks:

Date	Time	Relinquished by:	Received by:	Date	Time
5.13.15	1354			5-13-15	1354
5/13/15	1623			05/13/15	1623

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505618

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/13/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 22, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505618**
Date: **11/4/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8270:
Sample SWMU 10 EB06 was extracted 2 days past the 7 day holding time.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB06
Project: SWMU 10
Collection Date: 5/12/2015 5:15:00 PM
Lab ID: 1505618-001
Matrix: AQUEOUS
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 1:01:24 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 1:01:24 PM	19246
Surr: DNOP	141	0	76.5-150		%REC	1	5/15/2015 1:01:24 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/14/2015 2:23:33 PM	R26194
Chloride	ND	0.13	0.50		mg/L	1	5/14/2015 2:23:33 PM	R26194
Sulfate	ND	0.11	0.50		mg/L	1	5/14/2015 2:23:33 PM	R26194
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Beryllium	ND	0.00031	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Chromium	ND	0.0018	0.0060		mg/L	1	5/19/2015 4:55:35 PM	R26291
Cobalt	ND	0.0013	0.0060		mg/L	1	5/19/2015 4:55:35 PM	R26291
Iron	ND	0.0073	0.020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Manganese	0.00046	0.00027	0.0020	J	mg/L	1	5/19/2015 4:55:35 PM	R26291
Nickel	ND	0.0021	0.010		mg/L	1	5/19/2015 4:55:35 PM	R26291
Silver	ND	0.0012	0.0050		mg/L	1	5/19/2015 4:55:35 PM	R26291
Vanadium	ND	0.0015	0.050		mg/L	1	5/19/2015 4:55:35 PM	R26291
Zinc	0.062	0.0028	0.010		mg/L	1	5/19/2015 4:55:35 PM	R26291
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.00095	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Beryllium	ND	0.00031	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Chromium	ND	0.0022	0.0060		mg/L	1	5/21/2015 4:05:51 PM	R26358
Cobalt	ND	0.0013	0.0060		mg/L	1	5/21/2015 4:05:51 PM	R26358
Iron	ND	0.0073	0.020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Manganese	ND	0.0015	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Nickel	ND	0.0023	0.010		mg/L	1	5/21/2015 4:05:51 PM	R26358
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:05:51 PM	R26358
Vanadium	ND	0.0015	0.050		mg/L	1	5/21/2015 4:05:51 PM	R26358
Zinc	ND	0.0036	0.010		mg/L	1	5/21/2015 4:05:51 PM	R26358
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00031	0.00014	0.0010	J	mg/L	1	5/19/2015 4:25:30 PM	R26294
Arsenic	ND	0.000065	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
Lead	ND	0.000026	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
EPA 200.8: METALS							Analyst: **DBD**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB06
Project: SWMU 10
Collection Date: 5/12/2015 5:15:00 PM
Lab ID: 1505618-001
Matrix: AQUEOUS
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00043	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
Arsenic	ND	0.00029	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
Lead	ND	0.000047	0.00050		mg/L	1	5/20/2015 6:37:39 PM	R26325
Selenium	ND	0.00019	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00015	0.000059	0.00020	J	mg/L	1	5/28/2015 9:51:59 AM	19401
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Acenaphthylene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Aniline	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Anthracene	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Azobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benz(a)anthracene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(a)pyrene	ND	2.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(b)fluoranthene	ND	2.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(g,h,i)perylene	ND	3.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(k)fluoranthene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzoic acid	ND	1.0	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzyl alcohol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroethoxy)methane	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroethyl)ether	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroisopropyl)ether	ND	2.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-ethylhexyl)phthalate	ND	3.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Bromophenyl phenyl ether	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Butyl benzyl phthalate	ND	2.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Carbazole	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chloro-3-methylphenol	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chloroaniline	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Chloronaphthalene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Chlorophenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chlorophenyl phenyl ether	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Chrysene	ND	2.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Di-n-butyl phthalate	ND	2.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Di-n-octyl phthalate	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dibenz(a,h)anthracene	ND	3.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dibenzofuran	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,2-Dichlorobenzene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,3-Dichlorobenzene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB06
Project: SWMU 10
Collection Date: 5/12/2015 5:15:00 PM
Lab ID: 1505618-001
Matrix: AQUEOUS
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3,3´-Dichlorobenzidine	ND	2.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Diethyl phthalate	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dimethyl phthalate	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dichlorophenol	ND	1.4	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dimethylphenol	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4,6-Dinitro-2-methylphenol	ND	1.4	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dinitrophenol	ND	1.1	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dinitrotoluene	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,6-Dinitrotoluene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Fluoranthene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Fluorene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorobutadiene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorocyclopentadiene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachloroethane	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Indeno(1,2,3-cd)pyrene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Isophorone	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1-Methylnaphthalene	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Methylnaphthalene	ND	2.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Methylphenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3+4-Methylphenol	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodi-n-propylamine	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodimethylamine	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodiphenylamine	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Naphthalene	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Nitroaniline	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3-Nitroaniline	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Nitroaniline	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Nitrobenzene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Nitrophenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Nitrophenol	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pentachlorophenol	ND	1.1	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Phenanthrene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Phenol	ND	1.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pyrene	ND	2.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pyridine	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,2,4-Trichlorobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4,5-Trichlorophenol	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB06
Project: SWMU 10
Collection Date: 5/12/2015 5:15:00 PM
Lab ID: 1505618-001
Matrix: AQUEOUS
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	1.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Surr: 2-Fluorophenol	52.1	0	14.9-111	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: Phenol-d5	41.1	0	11.3-108	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 2,4,6-Tribromophenol	67.2	0	15.7-154	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: Nitrobenzene-d5	73.7	0	47.8-106	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 2-Fluorobiphenyl	77.5	0	21.3-123	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 4-Terphenyl-d14	52.7	0	14.3-135	H	%REC	1	5/26/2015 2:10:51 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Toluene	0.45	0.11	1.0	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Naphthalene	ND	0.22	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Acetone	1.4	0.94	10	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromobenzene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromoform	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromomethane	ND	1.2	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Butanone	ND	0.36	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Carbon disulfide	ND	0.67	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloroethane	ND	0.10	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloroform	ND	0.21	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloromethane	ND	0.17	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dibromomethane	ND	0.23	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB06
Project: SWMU 10
Collection Date: 5/12/2015 5:15:00 PM
Lab ID: 1505618-001
Matrix: AQUEOUS
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Hexanone	ND	0.48	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Styrene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/15/2015 5:08:12 PM	R26221
Surr: 1,2-Dichloroethane-d4	97.6	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: Dibromofluoromethane	97.1	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: Toluene-d8	96.2	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 EB06
Project: SWMU 10
Collection Date: 5/12/2015 5:15:00 PM
Lab ID: 1505618-001
Matrix: AQUEOUS
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/15/2015 5:08:12 PM	R26221
Surr: BFB	94.3	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-01

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001G SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/21/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-02

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001H SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/18/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

ESC
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YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
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1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765573

May 22, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG789295	05/18/15 10:11
Cyanide	< .005	mg/l			WG790550	05/21/15 23:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000590	0.000590	0.0	20	L764570-01	WG789295
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L764999-01	WG789295
Cyanide	mg/l	0.0	0.0	0.0	20	L765316-01	WG790550
Cyanide	mg/l	0.0	0.0	0.0	20	L765488-02	WG790550

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00189	94.5	90-110	WG789295
Cyanide	mg/l	.1	0.105	105.	90-110	WG790550

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00192	0.00189	96.0	90-110	1.57	20	WG789295
Cyanide	mg/l	0.102	0.105	102.	90-110	2.90	20	WG790550

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0517	0.0	.05	100.	90-110	L764728-02	WG789295
Cyanide	mg/l	0.203	0.0	.2	100.	90-110	L765316-03	WG790550

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0502	0.0517	100.	90-110	2.94	20	L764728-02	WG789295
Cyanide	mg/l	0.188	0.203	94.0	90-110	7.67	20	L765316-03	WG790550

Batch number /Run number / Sample number cross reference

WG789295: R3037684: L765573-02
WG790550: R3038621: L765573-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26358**	RunNo: **26358**
Prep Date:	Analysis Date: **5/21/2015**	SeqNo: **783228** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26358**	RunNo: **26358**
Prep Date:	Analysis Date: **5/21/2015**	SeqNo: **783229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.7	85	115			
Chromium	0.47	0.0060	0.5000	0	93.7	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.9	85	115			
Iron	0.47	0.020	0.5000	0	94.8	85	115			
Manganese	0.46	0.0020	0.5000	0	92.3	85	115			
Nickel	0.45	0.010	0.5000	0	91.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.49	0.050	0.5000	0	98.5	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0014	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.0020	0.5000	0	92.3	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.8	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.46	0.0060	0.5000	0	92.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.1	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			
Vanadium	0.47	0.050	0.5000	0	94.9	85	115			
Zinc	0.46	0.010	0.5000	0	91.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781112**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781113**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781115**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781116**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26325**		RunNo:	**26325**				
Prep Date:		Analysis Date:	**5/20/2015**		SeqNo:	**782323**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **R26325**		RunNo: **26325**					
Prep Date:		Analysis Date: **5/20/2015**		SeqNo: **782323**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **R26325**		RunNo: **26325**					
Prep Date:		Analysis Date: **5/20/2015**		SeqNo: **782324**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID: **R26325**		RunNo: **26325**					
Prep Date:		Analysis Date: **5/20/2015**		SeqNo: **782326**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID: **R26325**		RunNo: **26325**					
Prep Date:		Analysis Date: **5/20/2015**		SeqNo: **782327**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**150423-004AMS**	SampType: **MS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID: **R26325**		RunNo: **26325**					
Prep Date:		Analysis Date: **5/20/2015**		SeqNo: **786691**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	70	130			
Arsenic	0.031	0.0010	0.02500	0	125	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**150423-004AMS**	SampType:	**MS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**BatchQC**	Batch ID:	**R26325**		RunNo:	**26325**				
Prep Date:		Analysis Date:	**5/20/2015**		SeqNo:	**786691**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.027	0.0010	0.02500	0	109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26294**		RunNo: **26294**					
Prep Date:		Analysis Date: **5/19/2015**		SeqNo: **781144**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26294**		RunNo: **26294**					
Prep Date:		Analysis Date: **5/19/2015**		SeqNo: **781145**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **R26294**		RunNo: **26294**					
Prep Date:		Analysis Date: **5/19/2015**		SeqNo: **781146**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **R26294**		RunNo: **26294**					
Prep Date:		Analysis Date: **5/19/2015**		SeqNo: **781147**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26325**		RunNo: **26325**					
Prep Date:		Analysis Date: **5/20/2015**		SeqNo: **782370**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26325**	RunNo: **26325**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782370** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26325**	RunNo: **26325**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782371** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26325**	RunNo: **26325**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782372** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26325**	RunNo: **26325**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782373** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19401**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**19401**	RunNo:	**26454**					
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786366**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020								J

Sample ID	**LCS-19401**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**19401**	RunNo:	**26454**					
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786367**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBW**	Batch ID:	**R26194**		RunNo:	**26194**				
Prep Date:		Analysis Date:	**5/14/2015**		SeqNo:	**777996**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSW**	Batch ID:	**R26194**		RunNo:	**26194**				
Prep Date:		Analysis Date:	**5/14/2015**		SeqNo:	**777997**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.1	90	110			
Chloride	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	9.9	0.50	10.00	0	99.0	90	110			

Sample ID	**1505618-001DMS**	SampType:	**MS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**SWMU 10 EB06**	Batch ID:	**R26194**		RunNo:	**26194**				
Prep Date:		Analysis Date:	**5/14/2015**		SeqNo:	**778011**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	75.3	111			
Chloride	4.8	0.50	5.000	0	95.3	81.2	116			
Sulfate	9.8	0.50	10.00	0	97.5	84.2	113			

Sample ID	**1505618-001DMSD**	SampType:	**MSD**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**SWMU 10 EB06**	Batch ID:	**R26194**		RunNo:	**26194**				
Prep Date:		Analysis Date:	**5/14/2015**		SeqNo:	**778012**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	75.3	111	0.803	20	
Chloride	4.8	0.50	5.000	0	95.9	81.2	116	0.597	20	
Sulfate	9.8	0.50	10.00	0	98.0	84.2	113	0.519	20	

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBW**	Batch ID:	**R26194**		RunNo:	**26194**				
Prep Date:		Analysis Date:	**5/14/2015**		SeqNo:	**778054**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R26194**	RunNo:	**26194**					
Prep Date:		Analysis Date:	**5/14/2015**	SeqNo:	**778055**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	105	90	110			
Chloride	4.8	0.50	5.000	0	96.5	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19246**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range**				
Client ID:	**PBW**	Batch ID:	**19246**		RunNo:	**26216**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**		SeqNo:	**778433**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID	**LCS-19246**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range**				
Client ID:	**LCSW**	Batch ID:	**19246**		RunNo:	**26216**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**		SeqNo:	**778434**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Sample ID	**1505618-001CMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range**				
Client ID:	**SWMU 10 EB06**	Batch ID:	**19246**		RunNo:	**26216**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**		SeqNo:	**778436**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.2	1.0	5.000	0	123	75.9	164			
Surr: DNOP	0.64		0.5000		129	76.5	150			

Sample ID	**1505618-001CMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range**				
Client ID:	**SWMU 10 EB06**	Batch ID:	**19246**		RunNo:	**26216**				
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**		SeqNo:	**778437**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.1	1.0	5.000	0	121	75.9	164	1.82	22.1	
Surr: DNOP	0.66		0.5000		131	76.5	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.34	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.48	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778330** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778330** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	119	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	94.1	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID **1505618-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10 EB06**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778718** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.3	70	130			
Toluene	20	1.0	20.00	0.4492	100	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.8	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID **1505618-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10 EB06**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.5	70	130	0.269	20	
Toluene	20	1.0	20.00	0.4492	97.1	70	130	2.98	20	
Chlorobenzene	19	1.0	20.00	0	92.7	70	130	5.38	20	
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130	6.67	20	
Trichloroethene (TCE)	16	1.0	20.00	0	81.1	70	130	7.33	20	
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130	0	0	
Surr: Dibromofluoromethane	9.7		10.00		97.4	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3´-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19344**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**lcsd-19344**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **19344**		RunNo: **26418**					
Prep Date:	**5/21/2015**	Analysis Date: **5/26/2015**		SeqNo: **785105**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778743** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.7		10.00		97.2	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778745** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.8	80.6	122			
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID **1505618-001b ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10 EB06**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778820** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	89.2	56.9	133			
Surr: BFB	10		10.00		102	70	130			

Sample ID **1505618-001b msd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10 EB06**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	83.2	56.9	133	7.01	20	
Surr: BFB	9.6		10.00		95.9	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup | Work Order Number: 1505618 | RcptNo: 1

Received by/date: CS 05/13/15

Logged By: Ashley Gallegos 5/13/2015 4:23:00 PM

Completed By: Ashley Gallegos 5/14/2015 8:17:10 AM

Reviewed By: 05/14/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks: For 300 analysis, poured into a 500ml unpreserved bottle from a 1L Amber CS 05/14/15

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

APPROXIMATELY 250ml FROM PLASTIC BOTTLE USED FOR 8270 ANALYSIS DUE TO LOW SAMPLE VOLUME. 05/21/15

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505618	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1) DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOL	GEN CHEM CR 6		Air Bubbles (Y or N)
12.15	1715	WATER	SWMU 10 EB06	40 ML VOA-6	HCL	-001			✓							✓					
				1 LITER AMBER-2	—												✓	✓			
				250 ML AMBER-1	—					✓											
				100 ML PLASTIC-1	HNO_3													✓			
				500 ML PLASTIC-1	HNO_3													✓			
				500 ML PLASTIC-1	NaOH								✓								
✓	✓	✓		50 ML PLASTIC-1	$NH_4 2SO_4$														✓		

Date:	Time:	Relinquished by:	Received by:	Date	Time
13.15	1357			5-13-15	1357
Date:	Time:	Relinquished by:	Received by:	Date	Time
13.15	1623		Celina Sanchez	05/13/15	1623

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505698

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 22, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505698**
Date: **11/4/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8260:
The Matrix Spike (MS) recoveries were low and the Matrix Spike Duplicate (MSD) recoveries were acceptable. The MS was reanalzyed and confirmed to have low recoveries which is attributed to the sample matrix.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11-GW
Project: SWMU 10
Collection Date: 5/14/2015 11:20:00 AM
Lab ID: 1505698-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	5.5	0.91	1.0		mg/L	1	5/15/2015 6:51:00 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 6:51:00 PM	19246
Surr: DNOP	118	0	76.5-150		%REC	1	5/15/2015 6:51:00 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.15	0.50		mg/L	5	5/15/2015 6:38:40 PM	R26247
Chloride	2000	27	100		mg/L	200	5/19/2015 7:50:31 PM	R26305
Sulfate	380	2.3	10		mg/L	20	5/15/2015 6:51:04 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.24	0.00095	0.0020		mg/L	1	5/15/2015 5:28:13 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:28:13 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:07:26 PM	R26265
Chromium	0.0054	0.0018	0.0060	J	mg/L	1	5/15/2015 5:28:13 PM	R26242
Cobalt	0.010	0.0013	0.0060		mg/L	1	5/15/2015 5:28:13 PM	R26242
Iron	0.78	0.0073	0.020	*	mg/L	1	5/15/2015 5:28:13 PM	R26242
Manganese	3.9	0.0013	0.010	*	mg/L	5	5/18/2015 7:09:46 PM	R26265
Nickel	0.024	0.0021	0.010		mg/L	1	5/15/2015 5:28:13 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:07:26 PM	R26265
Vanadium	0.0052	0.0015	0.050	J	mg/L	1	5/15/2015 5:28:13 PM	R26242
Zinc	0.049	0.0028	0.010		mg/L	1	5/15/2015 5:28:13 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.3	0.048	0.10	*	mg/L	50	5/21/2015 3:37:54 PM	19333
Beryllium	0.017	0.00031	0.0020	*	mg/L	1	5/21/2015 3:13:08 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 3:13:08 PM	19333
Chromium	0.073	0.0022	0.0060		mg/L	1	5/21/2015 3:13:08 PM	19333
Cobalt	0.077	0.0013	0.0060		mg/L	1	5/21/2015 3:13:08 PM	19333
Iron	86	1.5	4.0	*	mg/L	200	5/21/2015 3:39:43 PM	19333
Manganese	13	0.076	0.10	*	mg/L	50	5/21/2015 3:37:54 PM	19333
Nickel	0.13	0.0023	0.010	*	mg/L	1	5/21/2015 3:13:08 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 3:13:08 PM	19333
Vanadium	0.12	0.0015	0.050		mg/L	1	5/21/2015 3:13:08 PM	19333
Zinc	0.19	0.0036	0.010		mg/L	1	5/21/2015 3:13:08 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 3:36:05 PM	R26294
Arsenic	0.0039	0.00065	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
Lead	0.00074	0.00026	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
Selenium	0.0076	0.0019	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11-GW
Project: SWMU 10
Collection Date: 5/14/2015 11:20:00 AM
Lab ID: 1505698-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:11:15 PM	19333
Arsenic	0.016	0.0015	0.0050	*	mg/L	5	5/21/2015 2:47:37 PM	19333
Lead	0.18	0.00047	0.0050	*	mg/L	10	5/26/2015 5:11:20 PM	19333
Selenium	0.0099	0.0019	0.010	J	mg/L	10	5/21/2015 2:50:41 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00075	0.000059	0.00020		mg/L	1	5/28/2015 10:05:07 AM	19401
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzoic acid	ND	2.1	40		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11-GW
Project: SWMU 10
Collection Date: 5/14/2015 11:20:00 AM
Lab ID: 1505698-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3,3´-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1-Methylnaphthalene	20	3.6	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Methylnaphthalene	16	4.5	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Naphthalene	4.4	3.7	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 2:38:45 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11-GW
Project: SWMU 10
Collection Date: 5/14/2015 11:20:00 AM
Lab ID: 1505698-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Surr: 2-Fluorophenol	50.9	0	14.9-111		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: Phenol-d5	40.8	0	11.3-108		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 2,4,6-Tribromophenol	80.2	0	15.7-154		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: Nitrobenzene-d5	76.4	0	47.8-106		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 2-Fluorobiphenyl	80.3	0	21.3-123		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 4-Terphenyl-d14	75.6	0	14.3-135		%REC	1	5/26/2015 2:38:45 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	2.5	0.13	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Toluene	6.0	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Ethylbenzene	40	0.20	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Methyl tert-butyl ether (MTBE)	14	0.35	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,4-Trimethylbenzene	64	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,3,5-Trimethylbenzene	22	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Naphthalene	45	0.44	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1-Methylnaphthalene	70	1.1	8.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Methylnaphthalene	98	1.2	8.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Acetone	8.8	1.9	20	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11-GW
Project: SWMU 10
Collection Date: 5/14/2015 11:20:00 AM
Lab ID: 1505698-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloroethane	0.93	0.80	2.0	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Isopropylbenzene	8.5	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Isopropyltoluene	2.7	0.38	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
n-Butylbenzene	3.4	0.49	6.0	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
n-Propylbenzene	11	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
sec-Butylbenzene	2.2	0.46	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Xylenes, Total	230	0.56	3.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: 4-Bromofluorobenzene	84.5	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: Dibromofluoromethane	102	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: Toluene-d8	93.4	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-11-GW
Project: SWMU 10
Collection Date: 5/14/2015 11:20:00 AM
Lab ID: 1505698-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	1.5	0.080	0.10		mg/L	2	5/20/2015 1:54:40 PM	R26322
Surr: BFB	95.4	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505698-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Ethylbenzene	0.11	0.10	1.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,4-Trimethylbenzene	0.29	0.16	1.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Naphthalene	0.31	0.22	2.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
1-Methylnaphthalene	0.71	0.54	4.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Methylnaphthalene	1.1	0.59	4.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505698-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Xylenes, Total	0.41	0.28	1.5	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: Dibromofluoromethane	101	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: Toluene-d8	98.1	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 3:21:13 PM	R26322
Surr: BFB	99.5	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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Mt. Juliet, TN 37122
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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-01

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001G SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/21/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

ESC
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Fax (615) 758-5859

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REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-02

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001H SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/18/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

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Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765573

May 22, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG789295	05/18/15 10:11
Cyanide	< .005	mg/l			WG790550	05/21/15 23:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000590	0.000590	0.0	20	L764570-01	WG789295
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L764999-01	WG789295
Cyanide	mg/l	0.0	0.0	0.0	20	L765316-01	WG790550
Cyanide	mg/l	0.0	0.0	0.0	20	L765488-02	WG790550

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00189	94.5	90-110	WG789295
Cyanide	mg/l	.1	0.105	105.	90-110	WG790550

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00192	0.00189	96.0	90-110	1.57	20	WG789295
Cyanide	mg/l	0.102	0.105	102.	90-110	2.90	20	WG790550

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0517	0.0	.05	100.	90-110	L764728-02	WG789295
Cyanide	mg/l	0.203	0.0	.2	100.	90-110	L765316-03	WG790550

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0502	0.0517	100.	90-110	2.94	20	L764728-02	WG789295
Cyanide	mg/l	0.188	0.203	94.0	90-110	7.67	20	L765316-03	WG790550

Batch number /Run number / Sample number cross reference

WG789295: R3037684: L765573-02
WG790550: R3038621: L765573-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**R26265**	RunNo:	**26265**					
Prep Date:		Analysis Date:	**5/18/2015**	SeqNo:	**780003**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26265**	RunNo:	**26265**					
Prep Date:		Analysis Date:	**5/18/2015**	SeqNo:	**780004**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26358**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783226**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780132** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Manganese	0.46	0.0020	0.5000	0	91.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781112**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781113**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781115**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781116**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782930**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26348**				
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782930**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26606**				
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792073**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19401**	SampType: **MBLK**		TestCode: **EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID: **19401**		RunNo: **26454**					
Prep Date:	**5/27/2015**	Analysis Date: **5/28/2015**		SeqNo: **786366**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020								J

Sample ID	**LCS-19401**	SampType: **LCS**		TestCode: **EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID: **19401**		RunNo: **26454**					
Prep Date:	**5/27/2015**	Analysis Date: **5/28/2015**		SeqNo: **786367**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26305**	RunNo: **26305**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781436** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26305**	RunNo: **26305**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781437** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **1505698-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10-11-GW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782111** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	6.6	2.0	40.00	2.493	10.4	70	130			S
Toluene	11	2.0	40.00	5.999	13.4	70	130			S
Chlorobenzene	4.7	2.0	40.00	0	11.7	70	130			S
1,1-Dichloroethene	3.1	2.0	40.00	0.5016	6.58	70	130			S
Trichloroethene (TCE)	4.0	2.0	40.00	0	9.98	70	130			S
Surr: 1,2-Dichloroethane-d4	21		20.00		105	70	130			
Surr: 4-Bromofluorobenzene	19		20.00		94.1	70	130			
Surr: Dibromofluoromethane	19		20.00		93.8	70	130			
Surr: Toluene-d8	20		20.00		101	70	130			

Sample ID **1505698-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10-11-GW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782112** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	40	2.0	40.00	2.493	92.7	70	130	142	20	R
Toluene	43	2.0	40.00	5.999	92.8	70	130	117	20	R
Chlorobenzene	36	2.0	40.00	0	90.0	70	130	154	20	R
1,1-Dichloroethene	39	2.0	40.00	0.5016	95.0	70	130	170	20	R
Trichloroethene (TCE)	34	2.0	40.00	0	85.4	70	130	158	20	R
Surr: 1,2-Dichloroethane-d4	23		20.00		114	70	130	0	0	
Surr: 4-Bromofluorobenzene	16		20.00		79.0	70	130	0	0	
Surr: Dibromofluoromethane	21		20.00		105	70	130	0	0	
Surr: Toluene-d8	21		20.00		103	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3´-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19344**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**lcsd-19344**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **19344**		RunNo: **26418**					
Prep Date:	**5/21/2015**	Analysis Date: **5/26/2015**		SeqNo: **785105**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782177**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782181**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505698** RcptNo: 1

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:28:29 AM**

Reviewed By: 05/19/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☑	CS 05/15/15
9. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☑	CS 05/15/15 Samples -001A and -001B (all vials) have bubbles. No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2, 12 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? yes
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks: For metals analysis, added 1ml HNO_3 for acceptable pH. Held in Logi for 24 hours. For 300 analysis, poured off from a 1L Amber to a 500ml plastic. CS 05/15

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Approximately 250mL from plastic bottle used for 8270 analysis due to low sample volume. JCMS 5/21/15

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name:
Project #: SWMU 10
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505898	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR 6		Air Bubbles (Y or N)
5.14.15	1120	WATER	SWMU 10-11-GW	40 mL VOA-6	HCL	-001			✓							✓						
				1L AMBER-2	—	-002											✓		✓			
				250 mL AMBER-1	—	-003				✓												
				100 mL PLASTIC-1	HNO_3	-004												✓				
				500 mL PLASTIC-1	HNO_3	-005												✓				
				500 mL PLASTIC-1	NaOH	-006							✓									
				50 mL PLASTIC-1	NH_4ZSO_4	-007														✓		
5.14.15	—	WATER	TRIP BLANK	40 mL VOA-4	HCL	-008										✓						

Date	Time	Relinquished by:	Received by:	Date	Time
5.14.15	1315			5/14/15	1315
5/15/15	8:55			05/15/15	0855

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505700

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505700**
Date: **11/4/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding hexavalent Chromium:
The Cr6 sample was received at a pH of 7.5. The sample pH should be in the range of 8 - 10.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12-GW
Project: SWMU 10
Collection Date: 5/14/2015 12:55:00 PM
Lab ID: 1505700-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 7:44:34 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 7:44:34 PM	19246
Surr: DNOP	123	0	76.5-150		%REC	1	5/15/2015 7:44:34 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	1.2	0.15	0.50		mg/L	5	5/15/2015 7:28:18 PM	R26247
Chloride	330	2.7	10		mg/L	20	5/15/2015 7:40:43 PM	R26247
Sulfate	370	2.3	10		mg/L	20	5/15/2015 7:40:43 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.085	0.00095	0.0020		mg/L	1	5/15/2015 5:30:13 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:30:13 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:11:48 PM	R26265
Chromium	0.0080	0.0018	0.0060		mg/L	1	5/15/2015 5:30:13 PM	R26242
Cobalt	0.0044	0.0013	0.0060	J	mg/L	1	5/15/2015 5:30:13 PM	R26242
Iron	2.6	0.036	0.10	*	mg/L	5	5/18/2015 7:14:00 PM	R26265
Manganese	0.91	0.00027	0.0020	*	mg/L	1	5/15/2015 5:30:13 PM	R26242
Nickel	0.012	0.0021	0.010		mg/L	1	5/15/2015 5:30:13 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:11:48 PM	R26265
Vanadium	0.011	0.0015	0.050	J	mg/L	1	5/15/2015 5:30:13 PM	R26242
Zinc	0.062	0.0028	0.010		mg/L	1	5/15/2015 5:30:13 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	7.3	0.048	0.10	*	mg/L	50	5/21/2015 3:41:30 PM	19333
Beryllium	0.037	0.0016	0.010	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Cadmium	ND	0.0048	0.010		mg/L	5	5/21/2015 3:18:50 PM	19333
Chromium	0.17	0.011	0.030	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Cobalt	0.14	0.0063	0.030		mg/L	5	5/21/2015 3:18:50 PM	19333
Iron	140	3.6	10	*	mg/L	500	5/21/2015 3:43:19 PM	19333
Manganese	18	0.076	0.10	*	mg/L	50	5/21/2015 3:41:30 PM	19333
Nickel	0.26	0.011	0.050	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Silver	ND	0.011	0.025		mg/L	5	5/21/2015 3:18:50 PM	19333
Vanadium	0.17	0.0075	0.25	J	mg/L	5	5/21/2015 3:18:50 PM	19333
Zinc	0.45	0.018	0.050		mg/L	5	5/21/2015 3:18:50 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00023	0.00014	0.0010	J	mg/L	1	5/19/2015 2:56:36 PM	R26294
Arsenic	0.0025	0.000065	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
Lead	0.0014	0.000026	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
Selenium	0.0030	0.00019	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12-GW
Project: SWMU 10
Collection Date: 5/14/2015 12:55:00 PM
Lab ID: 1505700-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:15:48 PM	19333
Arsenic	0.023	0.0029	0.010	*	mg/L	10	5/21/2015 2:53:44 PM	19333
Lead	0.28	0.0024	0.025	*	mg/L	50	5/21/2015 2:56:47 PM	19333
Selenium	0.0080	0.0019	0.010	J	mg/L	10	5/21/2015 2:53:44 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00039	0.000059	0.00020		mg/L	1	5/29/2015 2:57:39 PM	19430
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzoic acid	ND	2.1	40		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12-GW
Project: SWMU 10
Collection Date: 5/14/2015 12:55:00 PM
Lab ID: 1505700-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3,3´-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1-Methylnaphthalene	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Methylnaphthalene	ND	4.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Naphthalene	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 3:06:29 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12-GW
Project: SWMU 10
Collection Date: 5/14/2015 12:55:00 PM
Lab ID: 1505700-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Surr: 2-Fluorophenol	40.3	0	14.9-111		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: Phenol-d5	30.2	0	11.3-108		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 2,4,6-Tribromophenol	62.2	0	15.7-154		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: Nitrobenzene-d5	65.4	0	47.8-106		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 2-Fluorobiphenyl	63.2	0	21.3-123		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 4-Terphenyl-d14	45.3	0	14.3-135		%REC	1	5/26/2015 3:06:29 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.47	0.13	2.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Toluene	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Methyl tert-butyl ether (MTBE)	13	0.35	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,4-Trimethylbenzene	0.66	0.32	2.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Naphthalene	0.52	0.44	4.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
1-Methylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Methylnaphthalene	1.5	1.2	8.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Acetone	3.4	1.9	20	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12-GW
Project: SWMU 10
Collection Date: 5/14/2015 12:55:00 PM
Lab ID: 1505700-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
sec-Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: 4-Bromofluorobenzene	105	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: Dibromofluoromethane	97.5	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: Toluene-d8	99.1	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-12-GW
Project: SWMU 10
Collection Date: 5/14/2015 12:55:00 PM
Lab ID: 1505700-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.080	0.10		mg/L	2	5/20/2015 3:49:54 PM	R26322
Surr: BFB	103	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505700-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Toluene	0.14	0.11	1.0	J	µg/L	1	5/20/2015 5:16:05 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505700-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 5:16:05 PM	R26322
Surr: 1,2-Dichloroethane-d4	98.4	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: Dibromofluoromethane	97.5	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: Toluene-d8	101	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 5:16:05 PM	R26322
Surr: BFB	98.1	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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(615) 758-5858
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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765935-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505700-001G SWMU 10-12-GW

Project # :

Collected By :
Collection Date : 05/14/15 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: Printed: 06/02/15 11:33

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Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765935-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505700-001H SWMU 10-12-GW

Project # :

Collected By :
Collection Date : 05/14/15 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: Printed: 06/02/15 11:33
L765935-02 (CR6ICFFP) - pH=7.50

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765935

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765935-02
WG791484: R3039673: L765935-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**R26265**	RunNo:	**26265**					
Prep Date:		Analysis Date:	**5/18/2015**	SeqNo:	**780003**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26265**	RunNo:	**26265**					
Prep Date:		Analysis Date:	**5/18/2015**	SeqNo:	**780004**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Iron	0.46	0.020	0.5000	0	92.3	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26358**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783226**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.2	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780132** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Iron	0.45	0.020	0.5000	0	90.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781112**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781113**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781115**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781116**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782930**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782930**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792073**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19430**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19430**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787526**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19430**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19430**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787527**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R26247**	RunNo:	**26247**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**779359**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R26247**	RunNo:	**26247**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**779360**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Chloride	4.98	0.500	5.000	0	99.7	90	110			
Sulfate	10.2	0.500	10.00	0	102	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3´-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19344**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**lcsd-19344**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **19344**		RunNo: **26418**					
Prep Date:	**5/21/2015**	Analysis Date: **5/26/2015**		SeqNo: **785105**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782177**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782181**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Sample ID	**1505700-001B MS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**SWMU 10-12-GW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782185**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.93	0.10	1.000	0	93.0	56.9	133			
Surr: BFB	19		20.00		94.5	70	130			

Sample ID	**1505700-001B MSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**SWMU 10-12-GW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782186**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.95	0.10	1.000	0	95.5	56.9	133	2.63	20	
Surr: BFB	21		20.00		103	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505700** RcptNo: **1**

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:39:26 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☑ CS 05/15/15	
9. Was preservative added to bottles?	Yes ☑	No ☑ CS 05/15/15 Samples-001A (3 of 3)	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☑	No VOA Vials ☐ ~~0002A~~ -001B (all have bubbles)
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? Yes
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks: For metals analysis, added 2ml HNO_3 for acceptable pH. Held in Login for 24 hours. For 300 analysis, poured off from a 1L Amber in a 500ml plastic. CS 05/15 Approximately 250 mL from plastic bottle used for 8270 analysis due to low sample volume. kms 5/21/15.

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: WESTERN REFINING SW, INC.

GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD

GALLUP, NM 87301

Phone #: 505-722-0231

Email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package: Standard [X] Level 4 (Full Validation)

Accreditation: NELAP [ ] Other

EDD (Type): EXCEL

Turn-Around Time: [X] Standard [ ] Rush

Project Name: SWMU 10

Project #:

Project Manager: CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: [X] Yes [ ] No

Sample Temperature: 2.1

HEAL No. 1505700

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5/14/15	1255	WATER	SWMU 10-12-GW	40 mL VOA-6	HCl	-001
				1L AMBER-2	—	-001
				250 mL AMBER-1	—	-001
				100 mL PLASTIC-1	HNO_3	-001
				500mL PLASTIC-1	HNO_3	-001
				500 mL PLASTIC-1	NaOH	-001
				50 mL PLASTIC-1	NH_4ZSO_4	-001
5/14/15	—	WATER	TRIP BLANK	40 mL VOA-4	HCl	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8~~ Metals CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8 METALS (TOTAL) DISSOLVED	GEN CHEM	AR 6		Air Bubbles (Y or N)
		✓							✓						
										✓		✓			
			✓												
											✓				
											✓				
						✓									
													✓		
									✓						

Date: 5/14/15 Time: 1315 Relinquished by: [signature]

Received by: [signature] Date: 5/14/15 Time: 1315

Date: 5-15-15 Time: 8:55 Relinquished by: [signature]

Received by: [signature] Date: 05/15/15 Time: 0855

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 25, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505701

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14-GW
Project: SWMU 10
Collection Date: 5/14/2015 10:00:00 AM
Lab ID: 1505701-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 8:11:26 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 8:11:26 PM	19246
Surr: DNOP	127	0	76.5-150		%REC	1	5/15/2015 8:11:26 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	1.3	0.15	0.50		mg/L	5	5/15/2015 7:03:29 PM	R26247
Chloride	370	2.7	10		mg/L	20	5/15/2015 7:15:53 PM	R26247
Sulfate	370	2.3	10		mg/L	20	5/15/2015 7:15:53 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.18	0.00095	0.0020		mg/L	1	5/15/2015 5:31:58 PM	R26242
Beryllium	0.00090	0.00031	0.0020	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:23:18 PM	R26265
Chromium	0.0075	0.0018	0.0060		mg/L	1	5/15/2015 5:31:58 PM	R26242
Cobalt	0.0051	0.0013	0.0060	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Iron	3.9	0.036	0.10	*	mg/L	5	5/18/2015 7:25:35 PM	R26265
Manganese	1.1	0.0013	0.010	*	mg/L	5	5/18/2015 7:25:35 PM	R26265
Nickel	0.011	0.0021	0.010		mg/L	1	5/15/2015 5:31:58 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:23:18 PM	R26265
Vanadium	0.016	0.0015	0.050	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Zinc	0.014	0.0028	0.010		mg/L	1	5/15/2015 5:31:58 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	7.0	0.048	0.10	*	mg/L	50	5/21/2015 3:45:07 PM	19333
Beryllium	0.035	0.0016	0.010	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Cadmium	ND	0.0048	0.010		mg/L	5	5/21/2015 3:22:30 PM	19333
Chromium	0.15	0.011	0.030	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Cobalt	0.13	0.0063	0.030		mg/L	5	5/21/2015 3:22:30 PM	19333
Iron	130	3.6	10	*	mg/L	500	5/21/2015 3:46:56 PM	19333
Manganese	22	0.076	0.10	*	mg/L	50	5/21/2015 3:45:07 PM	19333
Nickel	0.25	0.011	0.050	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Silver	ND	0.011	0.025		mg/L	5	5/21/2015 3:22:30 PM	19333
Vanadium	0.16	0.0075	0.25	J	mg/L	5	5/21/2015 3:22:30 PM	19333
Zinc	0.36	0.018	0.050		mg/L	5	5/21/2015 3:22:30 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00014	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Arsenic	0.0030	0.000065	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Lead	0.0068	0.000026	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Selenium	0.0031	0.00019	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14-GW
Project: SWMU 10
Collection Date: 5/14/2015 10:00:00 AM
Lab ID: 1505701-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:24:54 PM	19333
Arsenic	0.029	0.0029	0.010	*	mg/L	10	5/21/2015 2:59:50 PM	19333
Lead	0.24	0.00047	0.0050	*	mg/L	10	5/21/2015 2:59:50 PM	19333
Selenium	0.010	0.0039	0.020	J	mg/L	20	5/21/2015 3:02:54 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00021	0.000059	0.00020		mg/L	1	5/29/2015 2:59:44 PM	19430
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzoic acid	ND	2.1	40		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14-GW
Project: SWMU 10
Collection Date: 5/14/2015 10:00:00 AM
Lab ID: 1505701-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3,3´-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1-Methylnaphthalene	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Methylnaphthalene	ND	4.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Naphthalene	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 3:34:14 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14-GW
Project: SWMU 10
Collection Date: 5/14/2015 10:00:00 AM
Lab ID: 1505701-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Surr: 2-Fluorophenol	63.6	0	14.9-111		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: Phenol-d5	46.6	0	11.3-108		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 2,4,6-Tribromophenol	87.7	0	15.7-154		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: Nitrobenzene-d5	88.7	0	47.8-106		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 2-Fluorobiphenyl	86.8	0	21.3-123		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 4-Terphenyl-d14	59.6	0	14.3-135		%REC	1	5/26/2015 3:34:14 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.47	0.13	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Toluene	0.30	0.22	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Methyl tert-butyl ether (MTBE)	16	0.35	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,4-Trimethylbenzene	0.44	0.32	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Naphthalene	ND	0.44	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1-Methylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Methylnaphthalene	ND	1.2	8.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Acetone	2.7	1.9	20	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14-GW
Project: SWMU 10
Collection Date: 5/14/2015 10:00:00 AM
Lab ID: 1505701-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
sec-Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: Dibromofluoromethane	96.1	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: Toluene-d8	96.7	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-14-GW
Project: SWMU 10
Collection Date: 5/14/2015 10:00:00 AM
Lab ID: 1505701-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.080	0.10		mg/L	2	5/20/2015 5:44:48 PM	R26322
Surr: BFB	96.9	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505701-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505701-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 6:13:33 PM	R26322
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: Dibromofluoromethane	107	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: Toluene-d8	92.7	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 6:13:33 PM	R26322
Surr: BFB	97.1	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765939-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505701-001G SWMU 10-14-GW

Project # :

Collected By :
Collection Date : 05/14/15 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:32 Printed: 06/02/15 11:35

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765939-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505701-001H SWMU 10-14-GW

Project # :

Collected By :
Collection Date : 05/14/15 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:32 Printed: 06/02/15 11:35

ESC
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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765939

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765939-02
WG791484: R3039673: L765939-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780004** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Iron	0.46	0.020	0.5000	0	92.3	85	115			
Manganese	0.47	0.0020	0.5000	0	93.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID **MB-19333**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **19333**	RunNo: **26358**
Prep Date: **5/20/2015**	Analysis Date: **5/21/2015**	SeqNo: **783226** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-19333**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **19333**	RunNo: **26358**
Prep Date: **5/20/2015**	Analysis Date: **5/21/2015**	SeqNo: **783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780132** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26265**	RunNo: **26265**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **780133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Iron	0.45	0.020	0.5000	0	90.7	85	115			
Manganese	0.46	0.0020	0.5000	0	91.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781112**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781113**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781115**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26294**	RunNo:	**26294**					
Prep Date:		Analysis Date:	**5/19/2015**	SeqNo:	**781116**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782930**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782930**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792073**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26294**	RunNo: **26294**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19430**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19430**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787526**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19430**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19430**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787527**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R26247**	RunNo:	**26247**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**779359**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R26247**	RunNo:	**26247**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**779360**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Chloride	4.98	0.500	5.000	0	99.7	90	110			
Sulfate	10.2	0.500	10.00	0	102	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3´-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19344**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**lcsd-19344**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID: **19344**		RunNo: **26418**					
Prep Date:	**5/21/2015**	Analysis Date: **5/26/2015**		SeqNo: **785105**	Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782177**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782181**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505701** RcptNo: 1

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:42:52 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☑ CS 05/15/15
9. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☑ No VOA Vials ☐ CS 05/15/15 Sample -001B (3 of 3) has a bubble.
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
Adjusted? yes
Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks: For metals analysis, added 2ml HNO_3 for acceptable pH. Held in Login for 24 hours. For 300 analysis, poured off from a 1L Amber into a 500. plastic. CS 05/15/15

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Approximately 250mL from plastic bottle used for 8270 analysis due to low sample volume. KMS. 5/21/15

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505701
5.14.15	1000	WATER	SWMU 10-14-GW	40 ML VOA-6	HCL	-001
				1L AMBER-2	—	-001
				250 ML AMBER-1	—	-001
				100 ML PLASTIC-1	HNO_3	-001
				500 ML PLASTIC-1	HNO_3	-001
				500 ML PLASTIC-1	NaOH	-001
				50 ML PLASTIC-1	NH_4ZSO_4	-001
5.14.15	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR6		Air Bubbles (Y or N)
		✓							✓						
										✓		✓			
			✓												
											✓				
											✓				
						✓									
													✓		
									✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.14.15	1315			5-14-15	1315
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-14-15	855			05/15/15	0855

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505705

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 3:55:00 PM
Lab ID: 1505705-001 **Matrix:** SOIL **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/20/2015 9:51:39 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/20/2015 9:51:39 AM	19293
Surr: DNOP	97.0	0	57.9-140		%REC	1	5/20/2015 9:51:39 AM	19293
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0048	0.0032	0.036	J	mg/Kg-dr	1	6/2/2015 10:06:43 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Arsenic	1.8	0.66	5.6	J	mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Barium	500	0.067	0.22		mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Beryllium	0.79	0.0083	0.17		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Chromium	9.3	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Cobalt	4.4	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Iron	15000	68	280		mg/Kg-dr	100	5/20/2015 10:32:29 AM	19279
Lead	2.9	0.12	0.28		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Manganese	460	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Nickel	7.7	0.14	0.56		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Vanadium	21	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Zinc	15	0.72	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 3:55:00 PM
Lab ID: 1505705-001 **Matrix:** SOIL **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
3,3´-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dinitrophenol	ND	0.046	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 3:55:00 PM
Lab ID: 1505705-001
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Surr: 2-Fluorophenol	49.8		26.4-129		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: Phenol-d5	55.4		34.8-118		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 2,4,6-Tribromophenol	52.3		26.8-128		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: Nitrobenzene-d5	55.7		35.8-124		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 2-Fluorobiphenyl	56.7		24.5-139		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 4-Terphenyl-d14	54.9		29.4-129		%REC	1	5/21/2015 1:41:40 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00112	0.000466	0.00207	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Toluene	0.00104	0.000215	0.00207	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Ethylbenzene	ND	0.000348	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Xylenes, Total	ND	0.00123	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000868	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,4-Trimethylbenzene	ND	0.000541	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3,5-Trimethylbenzene	ND	0.000363	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000555	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000248	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Naphthalene	ND	0.000677	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1-Methylnaphthalene	ND	0.000813	0.00414		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Methylnaphthalene	ND	0.000809	0.00414		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Acetone	0.0254	0.00129	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromobenzene	ND	0.000576	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 3:55:00 PM
Lab ID: 1505705-001
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000280	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromoform	ND	0.000536	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromomethane	ND	0.00122	0.00311		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Butanone	0.00304	0.000663	0.0104	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Carbon tetrachloride	ND	0.000375	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chlorobenzene	ND	0.000210	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloroform	ND	0.000426	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloromethane	ND	0.000244	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Chlorotoluene	ND	0.000404	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Carbon disulfide	ND	0.000937	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Chlorotoluene	ND	0.000399	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
cis-1,2-DCE	ND	0.000548	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
cis-1,3-Dichloropropene	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000608	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dibromochloromethane	ND	0.000232	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dibromomethane	ND	0.00118	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichlorobenzene	ND	0.000459	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3-Dichlorobenzene	ND	0.000351	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,4-Dichlorobenzene	ND	0.000325	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dichlorodifluoromethane	ND	0.000845	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloroethane	ND	0.000484	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloroethene	ND	0.000346	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichloropropane	ND	0.000442	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3-Dichloropropane	ND	0.000322	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2,2-Dichloropropane	ND	0.000360	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloropropene	ND	0.000379	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Hexachlorobutadiene	ND	0.000418	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Isopropylbenzene	ND	0.000480	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Isopropyltoluene	ND	0.000803	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Methylene chloride	ND	0.000512	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
n-Butylbenzene	ND	0.000850	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Hexanone	0.000787	0.000431	0.0104	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
n-Propylbenzene	ND	0.000388	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
sec-Butylbenzene	ND	0.000523	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Styrene	ND	0.000343	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Methyl-2-pentanone	ND	0.000874	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
tert-Butylbenzene	ND	0.000317	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000337	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (2-4')
Project: SWMU 10
Collection Date: 5/13/2015 3:55:00 PM
Lab ID: 1505705-001
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000455	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Tetrachloroethene (PCE)	ND	0.000410	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
trans-1,2-DCE	ND	0.000335	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
trans-1,3-Dichloropropene	ND	0.000271	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,3-Trichlorobenzene	ND	0.000757	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,4-Trichlorobenzene	ND	0.000776	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,1-Trichloroethane	ND	0.000295	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,2-Trichloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Trichloroethene (TCE)	ND	0.000411	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Trichlorofluoromethane	ND	0.000418	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,3-Trichloropropane	ND	0.000727	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Vinyl chloride	ND	0.000236	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Surr: 1,2-Dichloroethane-d4	91.7	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: Dibromofluoromethane	90.0	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: Toluene-d8	86.9	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.75	3.0		mg/Kg-dr	1	5/15/2015 6:34:28 PM	R26221
Surr: BFB	107	0	67.4-150		%REC	1	5/15/2015 6:34:28 PM	R26221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (4-5.5')
Project: SWMU 10
Collection Date: 5/13/2015 4:10:00 PM
Lab ID: 1505705-002 **Matrix:** SOIL **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg	1	5/20/2015 10:13:02 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	5/20/2015 10:13:02 AM	19293
Surr: DNOP	95.0	0	57.9-140		%REC	1	5/20/2015 10:13:02 AM	19293
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.9	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0037	0.0030	0.034	J	mg/Kg-dr	1	6/2/2015 10:08:29 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Arsenic	1.4	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Barium	430	0.065	0.22		mg/Kg-dr	2	5/20/2015 12:16:52 PM	19279
Beryllium	0.73	0.0081	0.16		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Chromium	8.8	0.066	0.33		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Cobalt	4.2	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Iron	15000	66	270		mg/Kg-dr	100	5/20/2015 10:33:51 AM	19279
Lead	3.0	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:25:39 PM	19279
Manganese	240	0.064	0.11		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Nickel	7.2	0.14	0.55		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Vanadium	22	0.037	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Zinc	14	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Anthracene	ND	0.094	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benz(a)anthracene	ND	0.087	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (4-5.5')
Project: SWMU 10
Collection Date: 5/13/2015 4:10:00 PM
Lab ID: 1505705-002 **Matrix:** SOIL **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
3,3´-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dimethylphenol	ND	0.087	0.33		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorocyclopentadiene	ND	0.077	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (4-5.5')
Project: SWMU 10
Collection Date: 5/13/2015 4:10:00 PM
Lab ID: 1505705-002
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pyridine	ND	0.093	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Surr: 2-Fluorophenol	57.0		26.4-129		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: Phenol-d5	66.3		34.8-118		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 2,4,6-Tribromophenol	69.1		26.8-128		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: Nitrobenzene-d5	61.2		35.8-124		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 2-Fluorobiphenyl	62.1		24.5-139		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 4-Terphenyl-d14	65.3		29.4-129		%REC	1	5/21/2015 2:09:19 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00221	0.000430	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Toluene	0.00151	0.000199	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Ethylbenzene	0.000401	0.000321	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Xylenes, Total	ND	0.00114	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000801	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,4-Trimethylbenzene	ND	0.000499	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3,5-Trimethylbenzene	ND	0.000335	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000512	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000228	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Naphthalene	ND	0.000624	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1-Methylnaphthalene	ND	0.000750	0.00382		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Methylnaphthalene	ND	0.000746	0.00382		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Acetone	0.00651	0.00119	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromobenzene	ND	0.000531	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (4-5.5')
Project: SWMU 10
Collection Date: 5/13/2015 4:10:00 PM
Lab ID: 1505705-002 **Matrix:** SOIL **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000258	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromoform	ND	0.000495	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Butanone	0.00146	0.000612	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Carbon tetrachloride	ND	0.000346	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chlorobenzene	ND	0.000194	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloroethane	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloroform	ND	0.000393	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloromethane	ND	0.000225	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Chlorotoluene	ND	0.000373	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Carbon disulfide	ND	0.000864	0.00955		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Chlorotoluene	ND	0.000368	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
cis-1,2-DCE	ND	0.000505	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
cis-1,3-Dichloropropene	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000561	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dibromochloromethane	ND	0.000214	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dibromomethane	ND	0.00108	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichlorobenzene	ND	0.000424	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3-Dichlorobenzene	ND	0.000324	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,4-Dichlorobenzene	ND	0.000300	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dichlorodifluoromethane	ND	0.000780	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloroethane	ND	0.000446	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloroethene	ND	0.000319	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichloropropane	ND	0.000408	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3-Dichloropropane	ND	0.000297	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2,2-Dichloropropane	ND	0.000332	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloropropene	ND	0.000350	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Hexachlorobutadiene	ND	0.000385	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Isopropylbenzene	ND	0.000443	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Isopropyltoluene	ND	0.000741	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Methylene chloride	0.000506	0.000472	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
n-Butylbenzene	ND	0.000784	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Hexanone	0.000669	0.000397	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
n-Propylbenzene	ND	0.000358	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
sec-Butylbenzene	ND	0.000482	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Styrene	ND	0.000317	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Methyl-2-pentanone	ND	0.000807	0.00955		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
tert-Butylbenzene	ND	0.000293	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000311	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (4-5.5')
Project: SWMU 10
Collection Date: 5/13/2015 4:10:00 PM
Lab ID: 1505705-002
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000420	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Tetrachloroethene (PCE)	ND	0.000379	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
trans-1,2-DCE	ND	0.000309	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
trans-1,3-Dichloropropene	ND	0.000250	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,3-Trichlorobenzene	ND	0.000699	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,4-Trichlorobenzene	ND	0.000716	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,1-Trichloroethane	ND	0.000272	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,2-Trichloroethane	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Trichloroethene (TCE)	ND	0.000380	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Trichlorofluoromethane	ND	0.000386	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,3-Trichloropropane	ND	0.000671	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Vinyl chloride	ND	0.000218	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: Dibromofluoromethane	95.3	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: Toluene-d8	84.1	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.67	2.7		mg/Kg-dr	1	5/15/2015 8:01:09 PM	R26221
Surr: BFB	110	0	67.4-150		%REC	1	5/15/2015 8:01:09 PM	R26221

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (8-9')
Project: SWMU 10
Collection Date: 5/13/2015 4:20:00 PM
Lab ID: 1505705-003 **Matrix:** SOIL **Received Date:** 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.6	10		mg/Kg	1	5/20/2015 10:34:15 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	5/20/2015 10:34:15 AM	19293
Surr: DNOP	101	0	57.9-140		%REC	1	5/20/2015 10:34:15 AM	19293
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	10	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0054	0.0032	0.037	J	mg/Kg-dr	1	6/2/2015 10:10:15 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Arsenic	1.3	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Barium	55	0.034	0.11		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Beryllium	0.78	0.0084	0.17		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Chromium	10	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Cobalt	5.7	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Iron	17000	68	280		mg/Kg-dr	100	5/20/2015 10:35:13 AM	19279
Lead	3.3	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:26:55 PM	19279
Manganese	810	0.33	0.56		mg/Kg-dr	5	5/20/2015 1:28:18 PM	19279
Nickel	10	0.15	0.56		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Vanadium	20	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Zinc	18	0.73	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (8-9')
Project: SWMU 10
Collection Date: 5/13/2015 4:20:00 PM
Lab ID: 1505705-003
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
3,3´-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dinitrophenol	ND	0.046	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorocyclopentadiene	ND	0.077	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachloroethane	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (8-9')
Project: SWMU 10
Collection Date: 5/13/2015 4:20:00 PM
Lab ID: 1505705-003
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Surr: 2-Fluorophenol	66.3		26.4-129		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: Phenol-d5	69.0		34.8-118		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 2,4,6-Tribromophenol	61.5		26.8-128		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: Nitrobenzene-d5	67.9		35.8-124		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 2-Fluorobiphenyl	65.8		24.5-139		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 4-Terphenyl-d14	57.8		29.4-129		%REC	1	5/21/2015 2:37:02 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0176	0.000405	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Toluene	0.0135	0.000187	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Ethylbenzene	0.00347	0.000302	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Xylenes, Total	0.00946	0.00107	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000754	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,4-Trimethylbenzene	0.00269	0.000470	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3,5-Trimethylbenzene	0.00170	0.000315	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000482	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000215	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Naphthalene	0.000845	0.000587	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1-Methylnaphthalene	ND	0.000706	0.00360		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Methylnaphthalene	ND	0.000702	0.00360		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Acetone	0.00313	0.00112	0.00899	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromobenzene	ND	0.000500	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (8-9')
Project: SWMU 10
Collection Date: 5/13/2015 4:20:00 PM
Lab ID: 1505705-003
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000243	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromoform	ND	0.000466	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromomethane	ND	0.00106	0.00270		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Butanone	0.00173	0.000576	0.00899	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Carbon tetrachloride	ND	0.000325	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chlorobenzene	ND	0.000182	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloroethane	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloroform	ND	0.000370	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloromethane	ND	0.000212	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Chlorotoluene	ND	0.000351	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Carbon disulfide	ND	0.000814	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Chlorotoluene	ND	0.000346	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
cis-1,2-DCE	ND	0.000475	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
cis-1,3-Dichloropropene	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000528	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dibromochloromethane	ND	0.000202	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dibromomethane	ND	0.00102	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichlorobenzene	ND	0.000399	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3-Dichlorobenzene	ND	0.000305	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,4-Dichlorobenzene	ND	0.000282	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dichlorodifluoromethane	ND	0.000734	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloroethane	ND	0.000420	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloroethene	ND	0.000300	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichloropropane	ND	0.000384	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3-Dichloropropane	ND	0.000280	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2,2-Dichloropropane	ND	0.000312	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloropropene	ND	0.000329	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Hexachlorobutadiene	ND	0.000363	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Isopropylbenzene	0.000539	0.000417	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Isopropyltoluene	ND	0.000698	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Methylene chloride	0.000611	0.000444	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
n-Butylbenzene	ND	0.000738	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Hexanone	ND	0.000374	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
n-Propylbenzene	0.000494	0.000337	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
sec-Butylbenzene	0.000683	0.000454	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Styrene	ND	0.000298	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Methyl-2-pentanone	ND	0.000759	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
tert-Butylbenzene	ND	0.000276	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000293	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16 (8-9')
Project: SWMU 10
Collection Date: 5/13/2015 4:20:00 PM
Lab ID: 1505705-003
Matrix: SOIL
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000395	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Tetrachloroethene (PCE)	ND	0.000356	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
trans-1,2-DCE	ND	0.000291	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
trans-1,3-Dichloropropene	ND	0.000235	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,3-Trichlorobenzene	ND	0.000658	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,4-Trichlorobenzene	ND	0.000674	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,1-Trichloroethane	ND	0.000256	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,2-Trichloroethane	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Trichloroethene (TCE)	ND	0.000357	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Trichlorofluoromethane	ND	0.000363	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,3-Trichloropropane	ND	0.000631	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Vinyl chloride	ND	0.000205	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Surr: 1,2-Dichloroethane-d4	87.5	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: Dibromofluoromethane	97.6	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: Toluene-d8	89.7	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.73	2.9		mg/Kg-dr	1	5/15/2015 8:30:07 PM	R26221
Surr: BFB	115	0	67.4-150		%REC	1	5/15/2015 8:30:07 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :

Sample ID : 1505705-001C SWMU 10-16 2-4FT

Collected By :
Collection Date : 05/13/15 15:55

ESC Sample # : L765944-01

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	76.			mV		2580 B-	05/23/15	1
pH	7.9	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765944-01 (PH) - 7.9 at 21.5c

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765944-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505705-002C SWMU 10-16 4-5.5FT

Project # :

Collected By :
Collection Date : 05/13/15 16:10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	38.			mV		2580 B-	05/23/15	1
pH	9.0	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765944-02 (PH) - 9.0 at 21.0c

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765944-03

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505705-003C SWMU 10-16 8-9FT

Project # :

Collected By :
Collection Date : 05/13/15 16:20

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	41.			mV		2580 B-	05/23/15	1
pH	8.8	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765944-03 (PH) - 8.8 at 20.9c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765944

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG790681	05/22/15 14:15
Cyanide	< .25	mg/kg			WG790306	05/26/15 09:43

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.00	7.00	0.143	1	L765520-16	WG790425
pH	su	6.30	6.30	0.633	1	L766317-01	WG790425
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L765944-01	WG790681
ORP	mV	54.0	56.0	3.64	20	L765419-02	WG790617
ORP	mV	46.0	45.0	2.20	20	L766227-03	WG790617
Cyanide	mg/kg	0.0	0.0	0.0	20	L765924-01	WG790306
Cyanide	mg/kg	0.0	0.0	0.0	20	L766617-01	WG790306

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.77	99.1	98.3-101.7	WG790425
Chromium,Hexavalent	mg/kg	59.8	59.8	100.	80-120	WG790681
ORP	mV	100	101.	101.	90-110	WG790617
Cyanide	mg/kg	101	124.	123.	50-150	WG790306

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.78	7.77	99.0	98.3-101.7	0.129	20	WG790425
Chromium,Hexavalent	mg/kg	60.2	59.8	101.	80-120	0.667	20	WG790681
ORP	mV	100.	101.	100.	90-110	0.995	20	WG790617
Cyanide	mg/kg	122.	124.	121.	50-150	1.63	20	WG790306

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.8	0.0	20	99.0	75-125	L765944-01	WG790681
Cyanide	mg/kg	2.97	0.0	3.33	89.0	80-120	L765924-04	WG790306

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L765944

June 02, 2015

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.9	19.8	99.5	75-125	0.504	20	L765944-01	WG790681
Cyanide	mg/kg	3.18	2.97	95.5	80-120	6.83	20	L765924-04	WG790306

Batch number /Run number / Sample number cross reference

WG790425: R3038502: L765944-01 02 03
WG790681: R3038806: L765944-01 02 03
WG790617: R3039123: L765944-01 02 03
WG790306: R3039168: L765944-01 02 03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19293**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19293**	RunNo: **26304**
Prep Date: **5/19/2015**	Analysis Date: **5/20/2015**	SeqNo: **781491** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	57.9	140			

Sample ID **LCS-19293**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19293**	RunNo: **26304**
Prep Date: **5/19/2015**	Analysis Date: **5/20/2015**	SeqNo: **781492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	67.8	130			
Surr: DNOP	5.1		5.000		101	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505705-001ams** SampType: **MS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **SWMU 10-16 (2-4')** Batch ID: **19243** RunNo: **26232**

Prep Date: **5/15/2015** Analysis Date: **5/15/2015** SeqNo: **778534** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0132	0.00222	0.01112	0.001118	109	33.4	127			
Toluene	0.0123	0.00222	0.01112	0.001035	101	24.8	130			
Chlorobenzene	0.0105	0.00222	0.01112	0	94.0	25.8	132			
1,1-Dichloroethene	0.0139	0.00222	0.01112	0	125	70	130			
Trichloroethene (TCE)	0.0130	0.00222	0.01112	0	117	70	130			
Surr: 1,2-Dichloroethane-d4	0.0255		0.02781		91.7	70	130			
Surr: 4-Bromofluorobenzene	0.0253		0.02781		90.8	70	130			
Surr: Dibromofluoromethane	0.0276		0.02781		99.3	70	130			
Surr: Toluene-d8	0.0261		0.02781		93.7	70	130			

Sample ID **1505705-001amsd** SampType: **MSD** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **SWMU 10-16 (2-4')** Batch ID: **19243** RunNo: **26232**

Prep Date: **5/15/2015** Analysis Date: **5/15/2015** SeqNo: **778535** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0134	0.00224	0.01121	0.001118	110	33.4	127	1.55	20	
Toluene	0.0128	0.00224	0.01121	0.001035	105	24.8	130	4.27	20	
Chlorobenzene	0.0113	0.00224	0.01121	0	101	25.8	132	7.68	20	
1,1-Dichloroethene	0.0140	0.00224	0.01121	0	125	70	130	0.556	20	
Trichloroethene (TCE)	0.0127	0.00224	0.01121	0	113	70	130	2.50	20	
Surr: 1,2-Dichloroethane-d4	0.0243		0.02803		86.8	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0271		0.02803		96.8	70	130	0	0	
Surr: Dibromofluoromethane	0.0259		0.02803		92.3	70	130	0	0	
Surr: Toluene-d8	0.0269		0.02803		96.0	70	130	0	0	

Sample ID **lcs-19243** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **LCSS** Batch ID: **19243** RunNo: **26232**

Prep Date: **5/15/2015** Analysis Date: **5/15/2015** SeqNo: **778538** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.00986	0.00200	0.01000	0	98.6	70	130			
Toluene	0.00912	0.00200	0.01000	0	91.2	70	130			
Chlorobenzene	0.00864	0.00200	0.01000	0	86.4	70	130			
1,1-Dichloroethene	0.0102	0.00200	0.01000	0	102	70	130			
Trichloroethene (TCE)	0.00966	0.00200	0.01000	0	96.6	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0235		0.02500		94.2	70	130			
Surr: 4-Bromofluorobenzene	0.0219		0.02500		87.6	70	130			
Surr: Dibromofluoromethane	0.0238		0.02500		95.4	70	130			
Surr: Toluene-d8	0.0218		0.02500		87.2	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19243**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19243**	RunNo: **26232**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00200								
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000820	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19243**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19243**	RunNo: **26232**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0229		0.02500		91.7	70	130			
Surr: 4-Bromofluorobenzene	0.0209		0.02500		83.5	70	130			
Surr: Dibromofluoromethane	0.0224		0.02500		89.5	70	130			
Surr: Toluene-d8	0.0231		0.02500		92.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19270**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19279**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19279**	RunNo: **26309**
Prep Date: **5/18/2015**	Analysis Date: **5/20/2015**	SeqNo: **781613** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.82	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-19279**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **19279**	RunNo: **26309**
Prep Date: **5/18/2015**	Analysis Date: **5/20/2015**	SeqNo: **781614** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	105	80	120			
Arsenic	25	2.5	25.00	0	99.0	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	26	0.15	25.00	0	106	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.6	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	25	0.25	25.00	0	99.1	80	120			
Manganese	25	0.10	25.00	0	100	80	120			
Nickel	25	0.50	25.00	0	99.1	80	120			
Selenium	25	2.5	25.00	0	101	80	120			
Silver	5.1	0.25	5.000	0	103	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**R26221**	RunNo:	**26221**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**778746**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.2	67.4	150			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**R26221**	RunNo:	**26221**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**778747**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Sample ID	**1505705-001b ms**	SampType:	**MS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**SWMU 10-16 (2-4')**	Batch ID:	**R26221**	RunNo:	**26221**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**778757**	Units:	**mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	11	3.0	14.94	0	73.9	65.2	156			
Surr: BFB	320		298.8		106	67.4	150			

Sample ID	**1505705-001B MSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**SWMU 10-16 (2-4')**	Batch ID:	**R26221**	RunNo:	**26221**					
Prep Date:		Analysis Date:	**5/15/2015**	SeqNo:	**778758**	Units:	**mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	11	3.0	14.94	0	70.6	65.2	156	4.60	20	
Surr: BFB	310		298.8		103	67.4	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505705** RcptNo: 1

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:53:30 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-772-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505705	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals & Cyanide (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5-13-15	1555	SOIL	SWMU 10-16(2-4')	2 JARS	—	-001			✓							✓	✓	✓			
				2 VIALS	MeOH	-001										✓					
				2 VIALS	SOBI	-001										✓					
	1610		SWMU 10-16(4-5.5')	2 JARS	—	-002			✓ KMS 5/21/15							✓	✓	✓			
				2 VIALS	MeOH	-002										✓					
				2 VIALS	SOBI	-002										✓					
	1620		SWMU 10-16(8-9')	2 JARS	—	-003			✓ KMS 5/21/15							✓	✓	✓			
				2 VIALS	MeOH	-003										✓					
				2 VIALS	SOBI	-003										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5-14-15	0717			5/14/15	0717
Date:	Time:	Relinquished by:	Received by:	Date	Time
5-15-15	8:55			05/15/15	0855

Remarks: Per Cheryl Johnson, Analyzed 1505705-002 and -003 for 8015 TPH.
KMS 5/21/15

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505708

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 26, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15-GW
Project: SWMU 10
Collection Date: 5/14/2015 4:00:00 PM
Lab ID: 1505708-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	1.0	0.91	1.0		mg/L	1	5/15/2015 9:05:01 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:05:01 PM	19246
Surr: DNOP	125	0	76.5-150		%REC	1	5/15/2015 9:05:01 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	0.55	0.15	0.50		mg/L	5	5/21/2015 12:19:15 AM	R26328
Chloride	2300	27	100		mg/L	200	5/21/2015 12:31:40 AM	R26328
Sulfate	440	2.3	10		mg/L	20	5/15/2015 6:26:16 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.22	0.00095	0.0020		mg/L	1	5/15/2015 5:35:46 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:35:46 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 5:01:37 PM	R26291
Chromium	0.0094	0.0018	0.0060		mg/L	1	5/15/2015 5:35:46 PM	R26242
Cobalt	0.023	0.0013	0.0060		mg/L	1	5/15/2015 5:35:46 PM	R26242
Iron	0.61	0.0073	0.020	*	mg/L	1	5/15/2015 5:35:46 PM	R26242
Manganese	2.4	0.0013	0.010	*	mg/L	5	5/19/2015 5:04:37 PM	R26291
Nickel	0.65	0.0021	0.010	*	mg/L	1	5/15/2015 5:35:46 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/19/2015 5:01:37 PM	R26291
Vanadium	0.0057	0.0015	0.050	J	mg/L	1	5/15/2015 5:35:46 PM	R26242
Zinc	0.15	0.0028	0.010		mg/L	1	5/15/2015 5:35:46 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.37	0.00095	0.0020		mg/L	1	5/21/2015 4:29:04 PM	19333
Beryllium	0.0015	0.00031	0.0020	J	mg/L	1	5/21/2015 4:29:04 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:29:04 PM	19333
Chromium	0.0062	0.0022	0.0060		mg/L	1	5/21/2015 4:29:04 PM	19333
Cobalt	0.025	0.0013	0.0060		mg/L	1	5/21/2015 4:29:04 PM	19333
Iron	9.4	0.15	0.40	*	mg/L	20	5/27/2015 3:41:18 PM	19333
Manganese	2.9	0.0076	0.010	*	mg/L	5	5/21/2015 4:30:52 PM	19333
Nickel	0.64	0.0023	0.010	*	mg/L	1	5/21/2015 4:29:04 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:29:04 PM	19333
Vanadium	0.019	0.0015	0.050	J	mg/L	1	5/21/2015 4:29:04 PM	19333
Zinc	0.046	0.0036	0.010		mg/L	1	5/21/2015 4:29:04 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 4:42:54 PM	R26294
Arsenic	0.011	0.0013	0.020	*J	mg/L	20	5/22/2015 6:15:34 PM	R26392
Lead	0.0026	0.00026	0.010	J	mg/L	10	5/19/2015 4:42:54 PM	R26294
Selenium	0.020	0.0019	0.010		mg/L	10	5/19/2015 4:42:54 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15-GW
Project: SWMU 10
Collection Date: 5/14/2015 4:00:00 PM
Lab ID: 1505708-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 4:48:32 PM	19333
Arsenic	0.012	0.0015	0.0050	*	mg/L	5	5/21/2015 4:39:52 PM	19333
Lead	0.014	0.00024	0.0025		mg/L	5	5/21/2015 4:39:52 PM	19333
Selenium	0.019	0.00097	0.0050		mg/L	5	5/21/2015 4:39:52 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/29/2015 3:42:35 PM	19431
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzoic acid	ND	1.0	20		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15-GW
Project: SWMU 10
Collection Date: 5/14/2015 4:00:00 PM
Lab ID: 1505708-001 **Matrix:** AQUEOUS **Received Date:** 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 7:27:38 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15-GW
Project: SWMU 10
Collection Date: 5/14/2015 4:00:00 PM
Lab ID: 1505708-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Surr: 2-Fluorophenol	59.1	0	14.9-111		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: Phenol-d5	70.7	0	11.3-108		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 2,4,6-Tribromophenol	72.4	0	15.7-154		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: Nitrobenzene-d5	105	0	47.8-106		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 2-Fluorobiphenyl	102	0	21.3-123		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 4-Terphenyl-d14	102	0	14.3-135		%REC	1	5/19/2015 7:27:38 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.51	0.13	2.0	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Toluene	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Methyl tert-butyl ether (MTBE)	150	0.35	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,4-Trimethylbenzene	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Naphthalene	ND	0.44	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1-Methylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Methylnaphthalene	ND	1.2	8.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Acetone	9.7	1.9	20	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Butanone	2.9	0.73	20	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15-GW
Project: SWMU 10
Collection Date: 5/14/2015 4:00:00 PM
Lab ID: 1505708-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
sec-Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: Dibromofluoromethane	115	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: Toluene-d8	102	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-15-GW
Project: SWMU 10
Collection Date: 5/14/2015 4:00:00 PM
Lab ID: 1505708-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	0.78	0.080	0.10		mg/L	2	5/20/2015 7:39:53 PM	R26322
Surr: BFB	97.8	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505708-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505708-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 8:08:38 PM	R26322
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: Dibromofluoromethane	106	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: Toluene-d8	97.7	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 8:08:38 PM	R26322
Surr: BFB	99.0	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765932-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505708-001H SWMU 10-15-GW

Project # :

Collected By :
Collection Date : 05/14/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.055	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765932-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505708-001I SWMU 10-15-GW

Project # :

Collected By :
Collection Date : 05/14/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765932-02 (CR6ICFFP) - pH=7.69

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765932

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765932-02
WG791484: R3039673: L765932-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**				
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26358**				
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783226**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**				
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**				
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	0.0014	0.0050								J

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781112**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781113**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781115**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781116**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**19333**		RunNo:	**26348**				
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**		SeqNo:	**782930**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LLLCS-19333**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782932**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	92.4	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.022	0.0010	0.02500	0	88.9	85	115			

Sample ID	**1505708-001FLLMS**	SampType:	**MS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**SWMU 10-15-GW**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782992**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.033	0.0050	0.02500	0.01167	86.1	70	130			
Lead	0.028	0.0025	0.01250	0.01383	114	70	130			
Selenium	0.041	0.0050	0.02500	0.01931	86.7	70	130			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784378**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784379**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784380**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784381**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505708-001FLLMS**	SampType:	**MSLL**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**SWMU 10-15-GW**	Batch ID:	**19333**	RunNo:	**26412**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/26/2015**	SeqNo:	**784803**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.011	0.0050	0.02500	0	43.5	70	130			S

Sample ID	**LLLCS-19333**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID:	**19333**	RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792066**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	114	85	115			

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792073**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781144**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781145**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781146**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781147**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**R26392**		RunNo:	**26392**				
Prep Date:		Analysis Date:	**5/22/2015**		SeqNo:	**784403**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26392**			RunNo: **26392**					
Prep Date:		Analysis Date: **5/22/2015**			SeqNo: **784404**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **R26392**			RunNo: **26392**					
Prep Date:		Analysis Date: **5/22/2015**			SeqNo: **784408**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26392**			RunNo: **26392**					
Prep Date:		Analysis Date: **5/22/2015**			SeqNo: **784409**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19431**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19431**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787555**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19431**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19431**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787556**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782445** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782446** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.3	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19246**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range**					
Client ID:	**PBW**	Batch ID:	**19246**	RunNo:	**26216**					
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**	SeqNo:	**778433**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID	**LCS-19246**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range**					
Client ID:	**LCSW**	Batch ID:	**19246**	RunNo:	**26216**					
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**	SeqNo:	**778434**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19289**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782177**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782181**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505708 RcptNo: 1

Received by/date: AG 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM AG

Completed By: Ashley Gallegos 5/15/2015 10:16:08 AM AG

Reviewed By: AG 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5-14-15	1600	WATER	SWMU 10-15-GW	40 ML VOA-6	HCL	1505708-001
				1 L AMBER-2	—	
				250 ML AMBER-1	—	
				100 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	NaOH	
				50 ML PLASTIC-1	$NH_4 2SO_4$	
	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1) DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL/DISSOLV	GEN CHEM	CR6		Air Bubbles (Y or N)
		✓							✓						
										✓		✓			
			✓												
											✓				
											✓				
						✓									
													✓		
									✓						

Date: 5.15.15 Time: 1003 Relinquished by:
Date: Time: Relinquished by:

Received by: [signature] Date: 05/15/15 Time: 1003
Received by: Date: Time:

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505709

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 26, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	1.1	0.91	1.0		mg/L	1	5/15/2015 9:31:35 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:31:35 PM	19246
Surr: DNOP	125	0	76.5-150		%REC	1	5/15/2015 9:31:35 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	0.55	0.15	0.50		mg/L	5	5/21/2015 12:44:04 AM	R26328
Chloride	2400	27	100		mg/L	200	5/21/2015 12:56:28 AM	R26328
Sulfate	470	2.3	10		mg/L	20	5/15/2015 6:01:26 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.22	0.00095	0.0020		mg/L	1	5/15/2015 5:37:44 PM	R26242
Beryllium	0.00033	0.00031	0.0020	J	mg/L	1	5/15/2015 5:37:44 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 5:06:41 PM	R26291
Chromium	0.0094	0.0018	0.0060		mg/L	1	5/15/2015 5:37:44 PM	R26242
Cobalt	0.023	0.0013	0.0060		mg/L	1	5/15/2015 5:37:44 PM	R26242
Iron	2.2	0.036	0.10	*	mg/L	5	5/19/2015 5:10:46 PM	R26291
Manganese	2.5	0.0013	0.010	*	mg/L	5	5/19/2015 5:10:46 PM	R26291
Nickel	0.66	0.0021	0.010	*	mg/L	1	5/15/2015 5:37:44 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/19/2015 5:06:41 PM	R26291
Vanadium	0.0076	0.0015	0.050	J	mg/L	1	5/15/2015 5:37:44 PM	R26242
Zinc	0.036	0.0028	0.010		mg/L	1	5/15/2015 5:37:44 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.31	0.00095	0.0020		mg/L	1	5/21/2015 4:32:36 PM	19333
Beryllium	0.0014	0.00031	0.0020	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:32:36 PM	19333
Chromium	0.0059	0.0022	0.0060	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Cobalt	0.025	0.0013	0.0060		mg/L	1	5/21/2015 4:32:36 PM	19333
Iron	7.4	0.15	0.40	*	mg/L	20	6/11/2015 10:56:49 AM	19333
Manganese	3.0	0.0076	0.010	*	mg/L	5	5/21/2015 4:34:26 PM	19333
Nickel	0.65	0.0023	0.010	*	mg/L	1	5/21/2015 4:32:36 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:32:36 PM	19333
Vanadium	0.017	0.0015	0.050	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Zinc	0.034	0.0036	0.010		mg/L	1	5/21/2015 4:32:36 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 4:47:49 PM	R26294
Arsenic	0.011	0.0013	0.020	J*	mg/L	20	5/22/2015 6:18:37 PM	R26392
Lead	0.0039	0.00026	0.010	J	mg/L	10	5/19/2015 4:47:49 PM	R26294
Selenium	0.023	0.0019	0.010		mg/L	10	5/19/2015 4:47:49 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 5:06:47 PM	19333
Arsenic	0.012	0.0015	0.0050	*	mg/L	5	5/21/2015 4:50:46 PM	19333
Lead	0.012	0.00094	0.010		mg/L	20	5/21/2015 4:53:29 PM	19333
Selenium	0.022	0.00097	0.0050		mg/L	5	5/21/2015 4:50:46 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/29/2015 3:44:33 PM	19431
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzoic acid	ND	1.0	20		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 7:55:52 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Surr: 2-Fluorophenol	18.1	0	14.9-111		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: Phenol-d5	27.8	0	11.3-108		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 2,4,6-Tribromophenol	31.3	0	15.7-154		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: Nitrobenzene-d5	110	0	47.8-106	S	%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 2-Fluorobiphenyl	112	0	21.3-123		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 4-Terphenyl-d14	96.8	0	14.3-135		%REC	1	5/19/2015 7:55:52 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.40	0.065	1.0	J	µg/L	1	5/20/2015 8:37:19 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Methyl tert-butyl ether (MTBE)	150	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Acetone	16	0.94	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Butanone	2.9	0.36	10	J	µg/L	1	5/20/2015 8:37:19 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 8:37:19 PM	R26322
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: 4-Bromofluorobenzene	88.0	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: Dibromofluoromethane	136	0	70-130	S	%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: Toluene-d8	92.4	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	0.73	0.040	0.050		mg/L	1	5/20/2015 8:37:19 PM	R26322
Surr: BFB	97.7	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505709-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: TRIP BLANK
Project: SWMU 10
Collection Date:
Lab ID: 1505709-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 9:05:59 PM	R26322
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: Dibromofluoromethane	97.9	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: Toluene-d8	96.4	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 9:05:59 PM	R26322
Surr: BFB	99.8	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765930-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505709-001H SWMU 10 DUP01GW

Project # :

Collected By :
Collection Date : 05/14/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.051	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: Printed: 06/02/15 11:32

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765930-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505709-001I SWMU 10 DUP01GW

Project # :

Collected By :
Collection Date : 05/14/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	0.00061	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: Printed: 06/02/15 11:32

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Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765930

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765930-02
WG791484: R3039673: L765930-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26358**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783226**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	0.0014	0.0050								J

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781112**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781113**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781115**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781116**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB-19333**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**				
Client ID:	**PBW**	Batch ID:	**19333**		RunNo:	**26348**				
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**		SeqNo:	**782930**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LLLCS-19333**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID:	**19333**	RunNo:	**26348**					
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**782932**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	92.4	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.022	0.0010	0.02500	0	88.9	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784378**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784379**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784380**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**R26392**	RunNo:	**26392**					
Prep Date:		Analysis Date:	**5/22/2015**	SeqNo:	**784381**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	**LLLCS-19333**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID:	**19333**	RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792066**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	114	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**	SeqNo:	**792073**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781144**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	**LCS**	SampType:	**LCS**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**LCSW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781145**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781146**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**R26294**		RunNo:	**26294**				
Prep Date:		Analysis Date:	**5/19/2015**		SeqNo:	**781147**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MB**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Dissolved Metals**				
Client ID:	**PBW**	Batch ID:	**R26392**		RunNo:	**26392**				
Prep Date:		Analysis Date:	**5/22/2015**		SeqNo:	**784403**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26392**			RunNo: **26392**					
Prep Date:		Analysis Date: **5/22/2015**			SeqNo: **784404**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	**MB**	SampType: **MBLK**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID: **R26392**			RunNo: **26392**					
Prep Date:		Analysis Date: **5/22/2015**			SeqNo: **784408**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID: **R26392**			RunNo: **26392**					
Prep Date:		Analysis Date: **5/22/2015**			SeqNo: **784409**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19431**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19431**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787555**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19431**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19431**	RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787556**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782445** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782446** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.3	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**
04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19289**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782177**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782181**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505709 RcptNo: 1

Received by/date: 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM

Completed By: Ashley Gallegos 5/15/2015 10:35:37 AM

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name:
Project #: SWMU 10
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 2.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5.14.15	—	WATER	SWMU 10 ~~REPORT~~ DUP01GW	40 ML VOA-6	HCL	1505709 -001
				1L AMBER-2	—	
				250 ML AMBER-1	—	
				100 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	HNO_3	
				500 ML PLASTIC-1	NaOH	
				50 ML PLASTIC-1	$NH_4 2SO_4$	
5.14.15	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR 6		Air Bubbles (Y or N)
		✓	✓						✓	✓	✓	✓	✓		

Date	Time	Relinquished by:	Received by:	Date	Time
5.15.15	1003				
				05/15/15	1003

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505710

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 01, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16-GW
Project: SWMU 10
Collection Date: 5/14/2015 2:30:00 PM
Lab ID: 1505710-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 9:58:19 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:58:19 PM	19246
Surr: DNOP	137	0	76.5-150		%REC	1	5/15/2015 9:58:19 PM	19246
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzoic acid	7.1	1.0	20	J	µg/L	1	5/19/2015 8:23:56 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16-GW
Project: SWMU 10
Collection Date: 5/14/2015 2:30:00 PM
Lab ID: 1505710-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 8:23:56 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Surr: 2-Fluorophenol	84.1	0	14.9-111		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: Phenol-d5	74.9	0	11.3-108		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 2,4,6-Tribromophenol	127	0	15.7-154		%REC	1	5/19/2015 8:23:56 PM	19289

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16-GW
Project: SWMU 10
Collection Date: 5/14/2015 2:30:00 PM
Lab ID: 1505710-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Surr: Nitrobenzene-d5	101	0	47.8-106		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 2-Fluorobiphenyl	118	0	21.3-123		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 4-Terphenyl-d14	129	0	14.3-135		%REC	1	5/19/2015 8:23:56 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.24	0.065	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Methyl tert-butyl ether (MTBE)	19	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichloroethane (EDC)	0.47	0.18	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Acetone	1.6	0.94	10	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
cis-1,2-DCE	0.39	0.081	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1-Dichloroethane	3.1	0.40	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-16-GW
Project: SWMU 10
Collection Date: 5/14/2015 2:30:00 PM
Lab ID: 1505710-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloroethene	0.73	0.099	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Trichloroethene (TCE)	0.77	0.16	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Vinyl chloride	0.47	0.13	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Xylenes, Total	0.35	0.28	1.5	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: Dibromofluoromethane	91.6	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: Toluene-d8	98.5	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 9:34:45 PM	R26322
Surr: BFB	96.2	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19289**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**5mL rb**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782177**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R26322**	RunNo:	**26322**					
Prep Date:		Analysis Date:	**5/20/2015**	SeqNo:	**782181**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505710 RcptNo: 1

Received by/date: AG 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM AG

Completed By: Ashley Gallegos 5/15/2015 10:37:57 AM AG

Reviewed By: AG 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505710	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Metals (Total & Dissol.)	Gen Chem	CRG		Air Bubbles (Y or N)
5/14/15	1430	WATER	SWMU 10-16-GW	40 mL VOA-6	HCL	-001			✓	✓			CYANIDE			✓						
	↓	↓	↓	1L AMBER-2	—												✓					

Date: 5.15.15 Time: 1003 Relinquished by: [signature]
Received by: [signature] Date: 05/15/15 Time: 1003
Date: Time: Relinquished by:
Received by: [signature] Date: Time:

Remarks:

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 20, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1605872

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/18/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB051616
Project: SWMU 10
Collection Date: 5/16/2016 6:00:00 PM
Lab ID: 1605872-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.69	1.0		mg/L	1	5/23/2016 2:31:45 PM	25434
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/23/2016 2:31:45 PM	25434
Surr: DNOP	109	0	70-141		%Rec	1	5/23/2016 2:31:45 PM	25434
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.023	0.10		mg/L	1	5/19/2016 8:59:00 PM	R34382
Chloride	ND	0.027	0.50		mg/L	1	5/19/2016 8:59:00 PM	R34382
Sulfate	ND	0.064	0.50		mg/L	1	5/19/2016 8:59:00 PM	R34382
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 12:19:40 PM	A34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 12:19:40 PM	A34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 12:19:40 PM	A34409
Chromium	ND	0.0018	0.0060		mg/L	1	5/23/2016 12:19:40 PM	A34409
Cobalt	ND	0.00074	0.0060		mg/L	1	5/23/2016 12:19:40 PM	A34409
Iron	0.016	0.0091	0.020	J	mg/L	1	5/23/2016 12:19:40 PM	A34409
Manganese	0.00043	0.00032	0.0020	J	mg/L	1	5/23/2016 12:19:40 PM	A34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 12:19:40 PM	A34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 12:19:40 PM	A34409
Vanadium	ND	0.0013	0.050		mg/L	1	5/23/2016 12:19:40 PM	A34409
Zinc	0.094	0.0028	0.010		mg/L	1	5/23/2016 12:19:40 PM	A34409
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Chromium	ND	0.0022	0.0060		mg/L	1	5/23/2016 10:37:58 AM	B34409
Cobalt	ND	0.00085	0.0060		mg/L	1	5/23/2016 10:37:58 AM	B34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Manganese	ND	0.0015	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 10:37:58 AM	B34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 10:37:58 AM	B34409
Vanadium	ND	0.0015	0.050		mg/L	1	5/23/2016 10:37:58 AM	B34409
Zinc	ND	0.0039	0.010		mg/L	1	5/23/2016 10:37:58 AM	B34409
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 3:09:01 PM	B34426
Arsenic	ND	0.00014	0.0010		mg/L	1	5/23/2016 3:09:01 PM	B34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 3:09:01 PM	B34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 3:09:01 PM	B34426
EPA 200.8: METALS							Analyst: **DBD**	

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB051616
Project: SWMU 10
Collection Date: 5/16/2016 6:00:00 PM
Lab ID: 1605872-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 1:36:14 PM	A34426
Arsenic	ND	0.00029	0.0010		mg/L	1	5/23/2016 1:36:14 PM	A34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 1:36:14 PM	A34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 1:36:14 PM	A34426
EPA METHOD 245.1: MERCURY							Analyst: **pmf**	
Mercury	ND	0.000053	0.00020		mg/L	1	5/24/2016 11:15:37 AM	25455
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Acenaphthylene	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Aniline	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Anthracene	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Azobenzene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benz(a)anthracene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzoic acid	ND	2.6	20		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzyl alcohol	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-ethylhexyl)phthalate	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Butyl benzyl phthalate	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Carbazole	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Chloroaniline	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Chloronaphthalene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Chlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Chrysene	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Di-n-butyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Di-n-octyl phthalate	ND	2.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Dibenzofuran	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437

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Hall Environmental Analysis Laboratory, Inc.

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Client Sample ID: EB051616
Project: SWMU 10
Collection Date: 5/16/2016 6:00:00 PM
Lab ID: 1605872-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
3,3´-Dichlorobenzidine	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Diethyl phthalate	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Dimethyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dichlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dimethylphenol	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dinitrophenol	ND	2.8	20		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Fluoranthene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Fluorene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachlorobutadiene	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachloroethane	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Isophorone	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Methylphenol	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
3+4-Methylphenol	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Naphthalene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Nitroaniline	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
3-Nitroaniline	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Nitroaniline	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Nitrobenzene	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Nitrophenol	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Nitrophenol	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Pentachlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:02:53 PM	25437
Phenanthrene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Phenol	ND	2.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Pyrene	ND	3.1	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Pyridine	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB051616
Project: SWMU 10
Collection Date: 5/16/2016 6:00:00 PM
Lab ID: 1605872-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Surr: 2-Fluorophenol	43.3	0	15-123		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: Phenol-d5	35.0	0	4.13-124		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: 2,4,6-Tribromophenol	79.4	0	18.4-134		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: Nitrobenzene-d5	64.3	0	28.8-134		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: 2-Fluorobiphenyl	65.3	0	35.9-125		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: 4-Terphenyl-d14	48.6	0	15-146		%Rec	1	5/24/2016 2:02:53 PM	25437
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.096	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Toluene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Naphthalene	ND	0.093	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Methylnaphthalene	0.44	0.16	4.0	J	µg/L	1	5/26/2016 2:38:05 PM	A34513
Acetone	5.5	4.9	10	J	µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromobenzene	ND	0.098	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromodichloromethane	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromoform	ND	0.10	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromomethane	ND	0.78	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Butanone	ND	0.74	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Carbon disulfide	ND	0.60	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chloroethane	ND	0.19	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chloroform	ND	0.089	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chloromethane	ND	0.21	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Dibromochloromethane	ND	0.087	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Dibromomethane	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB051616
Project: SWMU 10
Collection Date: 5/16/2016 6:00:00 PM
Lab ID: 1605872-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Hexanone	ND	0.84	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Isopropylbenzene	ND	0.10	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
n-Butylbenzene	ND	0.16	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
n-Propylbenzene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Styrene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/26/2016 2:38:05 PM	A34513
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
Surr: Toluene-d8	101	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	

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Lab ID: 1605872-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.015	0.050		mg/L	1	5/26/2016 2:38:05 PM	C34513
Surr: BFB	99.1	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	C34513

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Wet Chemistry by Method 4500CN E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Cyanide	U		0.00180	0.00500	1	05/26/2016 15:02	WG875229

Method Blank (MB)

(MB) R3140016-1 05/26/16 14:34

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Cyanide	U		0.00180	0.00500

L836171-02 Original Sample (OS) • Duplicate (DUP)

(OS) L836171-02 05/26/16 14:40 • (DUP) R3140016-4 05/26/16 14:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140016-2 05/26/16 14:35 • (LCSD) R3140016-3 05/26/16 14:36

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Cyanide	0.100	0.107	0.106	107	106	90.0-110			1.00	20

L836180-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836180-02 05/26/16 14:42 • (MS) R3140016-5 05/26/16 14:43 • (MSD) R3140016-6 05/26/16 14:46

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Cyanide	0.200	ND	0.186	0.201	93.0	101	1	90.0-110			8.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060912** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060916** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.3	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.0	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.4	85	115			
Iron	0.49	0.020	0.5000	0	97.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.0	85	115			
Silver	0.098	0.0050	0.1000	0	98.4	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060917** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0028	0.0020	0.002000	0	138	50	150			
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0016	0.0020	0.002000	0	81.0	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.0	50	150			J
Cobalt	0.0072	0.0060	0.006000	0	121	50	150			
Iron	0.022	0.020	0.02000	0	109	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LLLCS-B**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**BatchQC**	Batch ID:	**B34409**	RunNo:	**34409**
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1060917** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	105	50	150			
Nickel	0.0057	0.010	0.005000	0	113	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.010	0.050	0.01000	0	105	50	150			J
Zinc	0.0062	0.010	0.005000	0	123	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060909** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060910** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.2	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.49	0.0020	0.5000	0	98.4	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060911** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	89.0	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	94.0	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	87.0	50	150			J
Chromium	0.0058	0.0060	0.006000	0	96.3	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.023	0.020	0.02000	0	116	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**
20-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID	**LLLCS-A**	SampType: **LCSLL**		TestCode: **EPA Method 200.7: Dissolved Metals**						
Client ID:	**BatchQC**	Batch ID: **A34409**		RunNo: **34409**						
Prep Date:		Analysis Date: **5/23/2016**		SeqNo: **1060911**		Units: **mg/L**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese		0.0021	0.0020	0.002000	0	103	50	150			
Nickel		0.0055	0.010	0.005000	0	110	50	150			J
Silver		0.0049	0.0050	0.005000	0	97.8	50	150			J
Vanadium		0.0099	0.050	0.01000	0	98.9	50	150			J
Zinc		0.0048	0.010	0.005000	0	95.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType: **LCS**		TestCode: **EPA 200.8: Metals**					
Client ID:	**LCSW**	Batch ID: **A34426**		RunNo: **34426**					
Prep Date:		Analysis Date: **5/23/2016**		SeqNo: **1061483**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	**LCSLL**	SampType: **LCSLL**		TestCode: **EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID: **A34426**		RunNo: **34426**					
Prep Date:		Analysis Date: **5/23/2016**		SeqNo: **1061484**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	103	50	150			
Arsenic	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID	**MB**	SampType: **MBLK**		TestCode: **EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID: **A34426**		RunNo: **34426**					
Prep Date:		Analysis Date: **5/23/2016**		SeqNo: **1061486**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**B34426**	RunNo:	**34426**					
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1061592**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	**LCSLL**	SampType:	**LCSLL**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**BatchQC**	Batch ID:	**B34426**	RunNo:	**34426**					
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1061596**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	103	50	150			
Arsenic	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA 200.8: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**B34426**	RunNo:	**34426**					
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1061600**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25455**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**25455**	RunNo:	**34451**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062360**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-25455**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**25455**	RunNo:	**34451**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062361**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060112**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060113**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

Sample ID	**1605872-001EMS**	SampType:	**ms**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**EB051616**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060115**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.8	71.4	120			
Chloride	4.5	0.50	5.000	0	90.2	84	116			
Sulfate	9.3	0.50	10.00	0	93.3	87	116			

Sample ID	**1605872-001EMSD**	SampType:	**msd**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**EB051616**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060116**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.6	71.4	120	0.767	20	
Chloride	4.5	0.50	5.000	0	90.6	84	116	0.440	20	
Sulfate	9.4	0.50	10.00	0	93.7	87	116	0.378	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-25434**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **25434**	RunNo: **34407**
Prep Date: **5/23/2016**	Analysis Date: **5/23/2016**	SeqNo: **1060958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	105	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Sample ID **MB-25434**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **25434**	RunNo: **34407**
Prep Date: **5/23/2016**	Analysis Date: **5/23/2016**	SeqNo: **1060959** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		113	70	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064513** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064513** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	0.45	3.0								J
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25437**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **25437**	RunNo: **34450**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1062341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	6.7	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	3.8	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	4.8	10								J
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25437**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **25437**	RunNo: **34450**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1062341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		57.6	15	123			
Surr: Phenol-d5	87		200.0		43.6	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		79.7	18.4	134			
Surr: Nitrobenzene-d5	75		100.0		74.9	28.8	134			
Surr: 2-Fluorobiphenyl	71		100.0		71.3	35.9	125			
Surr: 4-Terphenyl-d14	65		100.0		65.5	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcs-25437**	SampType:	**LCS**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSW**	Batch ID:	**25437**	RunNo:	**34450**					
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062342**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	84	10	100.0	0	83.7	35	113			
4-Chloro-3-methylphenol	130	10	200.0	0	66.0	40.7	114			
2-Chlorophenol	130	10	200.0	0	64.4	37.6	113			
1,4-Dichlorobenzene	69	10	100.0	0	68.7	37.7	106			
2,4-Dinitrotoluene	70	10	100.0	0	70.1	37	91			
N-Nitrosodi-n-propylamine	74	10	100.0	0	74.5	45.4	105			
4-Nitrophenol	73	10	200.0	0	36.4	33.4	104			
Pentachlorophenol	120	20	200.0	0	58.0	29.5	94.9			
Phenol	77	10	200.0	0	38.4	30.6	119			
Pyrene	82	10	100.0	0	82.0	26.2	120			
1,2,4-Trichlorobenzene	82	10	100.0	0	81.6	39.9	125			
Surr: 2-Fluorophenol	95		200.0		47.6	15	123			
Surr: Phenol-d5	75		200.0		37.5	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.3	18.4	134			
Surr: Nitrobenzene-d5	68		100.0		68.2	28.8	134			
Surr: 2-Fluorobiphenyl	70		100.0		70.0	35.9	125			
Surr: 4-Terphenyl-d14	61		100.0		61.5	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605872**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**rb1**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**C34513**	RunNo:	**34513**					
Prep Date:		Analysis Date:	**5/26/2016**	SeqNo:	**1064532**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		ND	0.050								
Surr: BFB		9.7		10.00		96.9	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**C34513**	RunNo:	**34513**					
Prep Date:		Analysis Date:	**5/26/2016**	SeqNo:	**1064533**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		0.52	0.050	0.5000	0	103	75.4	118			
Surr: BFB		10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1605872 RcptNo: 1

Received by/date: 05/18/16

Logged By: Lindsay Mangin 5/18/2016 4:00:00 PM

Completed By: Lindsay Mangin 5/19/2016 6:38:35 AM

Reviewed By: 05/19/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2, 12 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 87 1605782
5-16-16	1800	WATER	EB051616	40 ML VOA-6	HCL	-001
				1 LITER AMBER-2	NEAT	-001
				250 ML AMBER-1	NEAT	-001
				100 ML PLASTIC-1	HNO_3	-001
				500 ML PLASTIC-1	$NaHNO_3$	-001
↓	↓	↓	↓	500 ML PLASTIC-1	NAOH	-001

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL / DISSOLVED)	GEN CHEM	(SEE ATTACHED LIST)		Air Bubbles (Y or N)
		✓							✓						
										✓		✓			
			✓												
											✓				
											✓				
						✓									

Date	Time	Relinquished by:	Received by:	Date	Time
5.17.16	0730			5/17/16	800
5/17/16	1400		Joe Cruz	05/18/16	1600

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

AND WATER QA/QC SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
~~Chromium VI~~	~~SW-846 Method 3060A~~
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 20, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1605873

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/18/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB051716
Project: SWMU 10
Collection Date: 5/17/2016 5:00:00 PM
Lab ID: 1605873-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.69	1.0		mg/L	1	5/23/2016 2:53:51 PM	25434
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/23/2016 2:53:51 PM	25434
Surr: DNOP	114	0	70-141		%Rec	1	5/23/2016 2:53:51 PM	25434
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.023	0.10		mg/L	1	5/19/2016 9:48:39 PM	R34382
Chloride	ND	0.027	0.50		mg/L	1	5/19/2016 9:48:39 PM	R34382
Sulfate	ND	0.064	0.50		mg/L	1	5/19/2016 9:48:39 PM	R34382
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Chromium	ND	0.0018	0.0060		mg/L	1	5/23/2016 12:21:52 PM	A34409
Cobalt	ND	0.00074	0.0060		mg/L	1	5/23/2016 12:21:52 PM	A34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Manganese	ND	0.00032	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 12:21:52 PM	A34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 12:21:52 PM	A34409
Vanadium	ND	0.0013	0.050		mg/L	1	5/23/2016 12:21:52 PM	A34409
Zinc	0.042	0.0028	0.010		mg/L	1	5/23/2016 12:21:52 PM	A34409
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Chromium	ND	0.0022	0.0060		mg/L	1	5/23/2016 10:40:08 AM	B34409
Cobalt	ND	0.00085	0.0060		mg/L	1	5/23/2016 10:40:08 AM	B34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Manganese	ND	0.0015	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 10:40:08 AM	B34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 10:40:08 AM	B34409
Vanadium	ND	0.0015	0.050		mg/L	1	5/23/2016 10:40:08 AM	B34409
Zinc	ND	0.0039	0.010		mg/L	1	5/23/2016 10:40:08 AM	B34409
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 3:14:10 PM	B34426
Arsenic	ND	0.00014	0.0010		mg/L	1	5/23/2016 3:14:10 PM	B34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 3:14:10 PM	B34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 3:14:10 PM	B34426
EPA 200.8: METALS							Analyst: **DBD**	

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EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 1:51:44 PM	A34426
Arsenic	ND	0.00029	0.0010		mg/L	1	5/23/2016 1:51:44 PM	A34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 1:51:44 PM	A34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 1:51:44 PM	A34426
EPA METHOD 245.1: MERCURY							Analyst: **pmf**	
Mercury	ND	0.000053	0.00020		mg/L	1	5/24/2016 11:17:41 AM	25455
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Acenaphthylene	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Aniline	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Anthracene	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Azobenzene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benz(a)anthracene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzoic acid	ND	2.6	20		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzyl alcohol	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-ethylhexyl)phthalate	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Butyl benzyl phthalate	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Carbazole	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Chloroaniline	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Chloronaphthalene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Chlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Chrysene	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Di-n-butyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Di-n-octyl phthalate	ND	2.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Dibenzofuran	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437

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EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
3,3´-Dichlorobenzidine	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Diethyl phthalate	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Dimethyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dichlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dimethylphenol	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dinitrophenol	ND	2.8	20		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Fluoranthene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Fluorene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachlorobutadiene	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachloroethane	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Isophorone	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Methylphenol	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
3+4-Methylphenol	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Naphthalene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Nitroaniline	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
3-Nitroaniline	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Nitroaniline	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Nitrobenzene	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Nitrophenol	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Nitrophenol	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Pentachlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:33:15 PM	25437
Phenanthrene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Phenol	ND	2.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Pyrene	ND	3.1	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Pyridine	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437

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EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Surr: 2-Fluorophenol	54.5	0	15-123		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: Phenol-d5	41.0	0	4.13-124		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: 2,4,6-Tribromophenol	72.7	0	18.4-134		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: Nitrobenzene-d5	73.3	0	28.8-134		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: 2-Fluorobiphenyl	67.2	0	35.9-125		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: 4-Terphenyl-d14	40.0	0	15-146		%Rec	1	5/24/2016 2:33:15 PM	25437
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.096	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Toluene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Naphthalene	ND	0.093	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Methylnaphthalene	ND	0.16	4.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Acetone	5.6	4.9	10	J	µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromobenzene	ND	0.098	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromodichloromethane	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromoform	ND	0.10	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromomethane	ND	0.78	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Butanone	ND	0.74	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Carbon disulfide	ND	0.60	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chloroethane	ND	0.19	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chloroform	ND	0.089	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chloromethane	ND	0.21	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Dibromochloromethane	ND	0.087	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Dibromomethane	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513

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EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Hexanone	ND	0.84	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Isopropylbenzene	ND	0.10	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
n-Butylbenzene	ND	0.16	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
n-Propylbenzene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Styrene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/26/2016 3:18:07 PM	A34513
Surr: 1,2-Dichloroethane-d4	96.7	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
Surr: Toluene-d8	102	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: EB051716
Project: SWMU 10
Collection Date: 5/17/2016 5:00:00 PM
Lab ID: 1605873-001
Matrix: AQUEOUS
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.015	0.050		mg/L	1	5/26/2016 3:18:07 PM	C34513
Surr: BFB	99.9	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	C34513

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Wet Chemistry by Method 4500CN E-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Cyanide	0.00294	J P1	0.00180	0.00500	1	05/26/2016 15:27	WG875229

Method Blank (MB)

(MB) R3140016-1 05/26/16 14:34

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Cyanide	U		0.00180	0.00500

L836171-02 Original Sample (OS) • Duplicate (DUP)

(OS) L836171-02 05/26/16 14:40 • (DUP) R3140016-4 05/26/16 14:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	ND	ND	1	0.000		20

L836954-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836954-01 05/26/16 15:27 • (DUP) R3140016-8 05/26/16 15:29

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	0.00294	ND	1	32.0	J P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140016-2 05/26/16 14:35 • (LCSD) R3140016-3 05/26/16 14:36

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Cyanide	0.100	0.107	0.106	107	106	90.0-110			1.00	20

L836180-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836180-02 05/26/16 14:42 • (MS) R3140016-5 05/26/16 14:43 • (MSD) R3140016-6 05/26/16 14:46

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Cyanide	0.200	ND	0.186	0.201	93.0	101	1	90.0-110			8.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060912** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060916** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.3	85	115			
Beryllium	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.0	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.4	85	115			
Iron	0.49	0.020	0.5000	0	97.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.0	85	115			
Silver	0.098	0.0050	0.1000	0	98.4	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060917** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0028	0.0020	0.002000	0	138	50	150			
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0016	0.0020	0.002000	0	81.0	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.0	50	150			J
Cobalt	0.0072	0.0060	0.006000	0	121	50	150			
Iron	0.022	0.020	0.02000	0	109	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LLLCS-B**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**BatchQC**	Batch ID:	**B34409**	RunNo:	**34409**
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1060917** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	105	50	150			
Nickel	0.0057	0.010	0.005000	0	113	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.010	0.050	0.01000	0	105	50	150			J
Zinc	0.0062	0.010	0.005000	0	123	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060909** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060910** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.2	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.49	0.0020	0.5000	0	98.4	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A34409**	RunNo: **34409**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1060911** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	89.0	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	94.0	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	87.0	50	150			J
Chromium	0.0058	0.0060	0.006000	0	96.3	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.023	0.020	0.02000	0	116	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**
20-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID	**LLLCS-A**	SampType: **LCSLL**		TestCode: **EPA Method 200.7: Dissolved Metals**						
Client ID:	**BatchQC**	Batch ID: **A34409**		RunNo: **34409**						
Prep Date:		Analysis Date: **5/23/2016**		SeqNo: **1060911**		Units: **mg/L**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese		0.0021	0.0020	0.002000	0	103	50	150			
Nickel		0.0055	0.010	0.005000	0	110	50	150			J
Silver		0.0049	0.0050	0.005000	0	97.8	50	150			J
Vanadium		0.0099	0.050	0.01000	0	98.9	50	150			J
Zinc		0.0048	0.010	0.005000	0	95.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **A34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC**	Batch ID: **A34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	103	50	150			
Arsenic	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **A34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061486** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061592** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	103	50	150			
Arsenic	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061600** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25455**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**25455**	RunNo:	**34451**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062360**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-25455**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**25455**	RunNo:	**34451**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062361**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060112**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060113**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.6	0.50	5.000	0	92.9	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

Sample ID	**1605873-001EMS**	SampType:	**ms**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**EB051716**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060119**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	71.4	120			
Chloride	4.6	0.50	5.000	0	92.4	84	116			
Sulfate	9.5	0.50	10.00	0	95.4	87	116			

Sample ID	**1605873-001EMSD**	SampType:	**msd**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**EB051716**	Batch ID:	**R34382**	RunNo:	**34382**					
Prep Date:		Analysis Date:	**5/19/2016**	SeqNo:	**1060120**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	71.4	120	1.33	20	
Chloride	4.6	0.50	5.000	0	93.0	84	116	0.673	20	
Sulfate	9.6	0.50	10.00	0	96.0	87	116	0.604	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-25434**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **25434**	RunNo: **34407**
Prep Date: **5/23/2016**	Analysis Date: **5/23/2016**	SeqNo: **1060958** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	105	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Sample ID **MB-25434**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **25434**	RunNo: **34407**
Prep Date: **5/23/2016**	Analysis Date: **5/23/2016**	SeqNo: **1060959** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		113	70	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064513** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064513** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	0.45	3.0								J
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25437**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **25437**	RunNo: **34450**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1062341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	6.7	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	3.8	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	4.8	10								J
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25437**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **25437**	RunNo: **34450**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1062341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		57.6	15	123			
Surr: Phenol-d5	87		200.0		43.6	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		79.7	18.4	134			
Surr: Nitrobenzene-d5	75		100.0		74.9	28.8	134			
Surr: 2-Fluorobiphenyl	71		100.0		71.3	35.9	125			
Surr: 4-Terphenyl-d14	65		100.0		65.5	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcs-25437**	SampType:	**LCS**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**LCSW**	Batch ID:	**25437**	RunNo:	**34450**
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062342** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	84	10	100.0	0	83.7	35	113			
4-Chloro-3-methylphenol	130	10	200.0	0	66.0	40.7	114			
2-Chlorophenol	130	10	200.0	0	64.4	37.6	113			
1,4-Dichlorobenzene	69	10	100.0	0	68.7	37.7	106			
2,4-Dinitrotoluene	70	10	100.0	0	70.1	37	91			
N-Nitrosodi-n-propylamine	74	10	100.0	0	74.5	45.4	105			
4-Nitrophenol	73	10	200.0	0	36.4	33.4	104			
Pentachlorophenol	120	20	200.0	0	58.0	29.5	94.9			
Phenol	77	10	200.0	0	38.4	30.6	119			
Pyrene	82	10	100.0	0	82.0	26.2	120			
1,2,4-Trichlorobenzene	82	10	100.0	0	81.6	39.9	125			
Surr: 2-Fluorophenol	95		200.0		47.6	15	123			
Surr: Phenol-d5	75		200.0		37.5	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.3	18.4	134			
Surr: Nitrobenzene-d5	68		100.0		68.2	28.8	134			
Surr: 2-Fluorobiphenyl	70		100.0		70.0	35.9	125			
Surr: 4-Terphenyl-d14	61		100.0		61.5	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605873**

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**rb1**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**C34513**	RunNo:	**34513**					
Prep Date:		Analysis Date:	**5/26/2016**	SeqNo:	**1064532**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		ND	0.050								
Surr: BFB		9.7		10.00		96.9	70	130			

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**C34513**	RunNo:	**34513**					
Prep Date:		Analysis Date:	**5/26/2016**	SeqNo:	**1064533**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		0.52	0.050	0.5000	0	103	75.4	118			
Surr: BFB		10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1605873 RcptNo: 1

Received by/date: SA 05/18/16

Logged By: **Lindsay Mangin** 5/18/2016 4:00:00 PM

Completed By: **Lindsay Mangin** 5/19/2016 6:44:35 AM

Reviewed By: 05/19/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?			

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 3 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☑ NA ☐

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Chain-of-Custody Record

Client: WESTERN REFINING SW
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605873	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	(SEE ATTACHED LIST)		Air Bubbles (Y or N)
5.17.16	1700	WATER	EB051716	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NAOH	-001							✓									

Date	Time	Relinquished by:	Received by:	Date	Time
5.18.16	0720			5/18/16	800
5/18/16	1400			05/18/16	1600

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

AND WATER QA/QC SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
~~Chromium VI~~	~~SW-846 Method 3060A~~
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 28, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1605874

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/18/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (2-2.5')
Project: SWMU 10
Collection Date: 5/16/2016 4:20:00 PM
Lab ID: 1605874-001 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.3	12		mg/Kg-dr	1	5/24/2016 9:49:27 AM	25449
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	5/24/2016 9:49:27 AM	25449
Surr: DNOP	98.0	0	70-130		%Rec	1	5/24/2016 9:49:27 AM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0044	0.00068	0.040	J	mg/Kg-dr	1	5/24/2016 12:42:15 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.7	1.4	3.0	J	mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Arsenic	1.8	0.87	3.0	J	mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Barium	130	0.12	0.24		mg/Kg-dr	2	6/1/2016 12:19:23 PM	25586
Beryllium	1.1	0.0055	0.18		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Cadmium	ND	0.076	0.12		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Chromium	8.8	0.15	0.36		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Cobalt	4.7	0.045	0.36		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Iron	20000	120	310		mg/Kg-dr	100	6/16/2016 8:20:52 AM	25586
Lead	5.2	0.21	0.30		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Manganese	200	0.053	0.12		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Nickel	8.7	0.14	0.60		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Vanadium	17	0.042	3.0		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Zinc	15	0.68	3.0		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Acenaphthylene	ND	0.099	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Anthracene	ND	0.080	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(a)pyrene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzoic acid	ND	0.10	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzyl alcohol	ND	0.095	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (2-2.5')
Project: SWMU 10
Collection Date: 5/16/2016 4:20:00 PM
Lab ID: 1605874-001 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.089	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.099	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Carbazole	ND	0.082	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Chloroaniline	ND	0.13	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Chloronaphthalene	ND	0.095	0.30		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Chlorophenol	ND	0.096	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Di-n-butyl phthalate	0.14	0.091	0.49	J	mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Di-n-octyl phthalate	ND	0.10	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Dibenz(a,h)anthracene	ND	0.098	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,2-Dichlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,3-Dichlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
3,3´-Dichlorobenzidine	ND	0.089	0.30		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dichlorophenol	ND	0.11	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.073	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dinitrophenol	ND	0.080	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Fluoranthene	ND	0.070	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Fluorene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachlorobenzene	ND	0.096	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachlorobutadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.095	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1-Methylnaphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Methylnaphthalene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Methylphenol	ND	0.10	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
3+4-Methylphenol	ND	0.088	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (2-2.5')
Project: SWMU 10
Collection Date: 5/16/2016 4:20:00 PM
Lab ID: 1605874-001 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Naphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Nitroaniline	ND	0.085	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Nitrophenol	ND	0.092	0.30		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Pentachlorophenol	ND	0.078	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Phenanthrene	ND	0.082	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Phenol	ND	0.091	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Pyrene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Pyridine	ND	0.096	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Surr: 2-Fluorophenol	58.0	0	28.3-102		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: Phenol-d5	64.0	0	35.7-103		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: 2,4,6-Tribromophenol	77.8	0	35.2-108		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: Nitrobenzene-d5	63.7		24-118		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: 2-Fluorobiphenyl	69.6		35.4-111		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: 4-Terphenyl-d14	54.1		15-91.7		%Rec	1	5/25/2016 1:49:34 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Toluene	0.952	0.268	2.21	J	µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Ethylbenzene	ND	0.297	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.372	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,4-Trimethylbenzene	ND	0.375	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.365	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Naphthalene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1-Methylnaphthalene	ND	0.252	4.43		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Methylnaphthalene	ND	0.583	4.43		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Acetone	8.98	0.655	11.1	J	µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Bromobenzene	ND	0.225	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Bromodichloromethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Bromoform	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468

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Lab ID: 1605874-001
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.398	3.32		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Butanone	ND	0.798	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Carbon disulfide	ND	0.819	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Carbon tetrachloride	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chlorobenzene	ND	0.254	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chloroethane	ND	0.409	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chloroform	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chloromethane	ND	0.561	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Chlorotoluene	ND	0.377	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
4-Chlorotoluene	ND	0.368	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
cis-1,2-DCE	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
cis-1,3-Dichloropropene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.236	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Dibromochloromethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Dibromomethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dichlorobenzene	ND	0.322	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,3-Dichlorobenzene	ND	0.409	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,4-Dichlorobenzene	ND	0.414	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Dichlorodifluoromethane	ND	1.29	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1-Dichloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1-Dichloroethene	ND	0.362	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dichloropropane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,3-Dichloropropane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2,2-Dichloropropane	ND	0.280	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1-Dichloropropene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Hexachlorobutadiene	ND	0.505	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Hexanone	ND	0.551	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Isopropylbenzene	ND	0.279	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
4-Isopropyltoluene	ND	0.415	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
4-Methyl-2-pentanone	ND	4.43	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Methylene chloride	ND	2.21	3.32		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
n-Butylbenzene	ND	0.539	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
n-Propylbenzene	ND	0.396	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
sec-Butylbenzene	ND	0.393	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Styrene	ND	0.283	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
tert-Butylbenzene	ND	0.323	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Tetrachloroethene (PCE)	ND	0.291	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (2-2.5')
Project: SWMU 10
Collection Date: 5/16/2016 4:20:00 PM
Lab ID: 1605874-001 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.224	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
trans-1,3-Dichloropropene	ND	0.268	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.536	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.671	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,1-Trichloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,2-Trichloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Trichloroethene (TCE)	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Trichlorofluoromethane	ND	0.278	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,3-Trichloropropane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Vinyl chloride	ND	0.582	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Xylenes, Total	ND	0.882	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
Surr: Dibromofluoromethane	93.3	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
Surr: Toluene-d8	96.1	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	1.5	0.53	3.5	J	mg/Kg-dr	1	5/23/2016 5:28:58 PM	C34413
Surr: BFB	96.4	0	70-130		%Rec	1	5/23/2016 5:28:58 PM	C34413

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (8-10')
Project: SWMU 10
Collection Date: 5/16/2016 4:30:00 PM
Lab ID: 1605874-002 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	11	4.2	12	J	mg/Kg-dr	1	5/24/2016 10:54:40 AM	25449
Motor Oil Range Organics (MRO)	ND	58	58		mg/Kg-dr	1	5/24/2016 10:54:40 AM	25449
Surr: DNOP	100	0	70-130		%Rec	1	5/24/2016 10:54:40 AM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0052	0.00067	0.039	J	mg/Kg-dr	1	5/24/2016 12:51:15 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	2.8	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Arsenic	2.2	1.7	5.9	J	mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Barium	170	0.28	0.59		mg/Kg-dr	5	5/26/2016 3:12:16 PM	25447
Beryllium	1.1	0.011	0.35		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Cadmium	ND	0.15	0.23		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Chromium	11	0.29	0.70		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Cobalt	6.4	0.089	0.70		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Iron	15000	120	310		mg/Kg-dr	100	6/16/2016 8:21:59 AM	25586
Lead	4.9	0.41	0.59		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Manganese	700	0.26	0.59		mg/Kg-dr	5	5/26/2016 3:12:16 PM	25447
Nickel	12	0.27	1.2		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Selenium	ND	2.6	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Silver	ND	0.074	0.59		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Vanadium	19	0.082	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Zinc	21	1.3	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Acenaphthylene	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Anthracene	ND	0.078	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benz(a)anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(a)pyrene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzoic acid	ND	0.097	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzyl alcohol	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (8-10')
Project: SWMU 10
Collection Date: 5/16/2016 4:30:00 PM
Lab ID: 1605874-002
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.095	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Carbazole	ND	0.079	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Chloroaniline	ND	0.13	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Chloronaphthalene	ND	0.092	0.29		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Chlorophenol	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Chrysene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Di-n-butyl phthalate	0.089	0.088	0.47	J	mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Di-n-octyl phthalate	ND	0.10	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Dibenz(a,h)anthracene	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,2-Dichlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,3-Dichlorobenzene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,4-Dichlorobenzene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
3,3´-Dichlorobenzidine	ND	0.086	0.29		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Diethyl phthalate	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dichlorophenol	ND	0.11	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dimethylphenol	ND	0.13	0.35		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.071	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dinitrophenol	ND	0.078	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Fluoranthene	ND	0.067	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Fluorene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachlorobenzene	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1-Methylnaphthalene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Methylnaphthalene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Methylphenol	ND	0.098	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
3+4-Methylphenol	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (8-10')
Project: SWMU 10
Collection Date: 5/16/2016 4:30:00 PM
Lab ID: 1605874-002
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Nitroaniline	ND	0.083	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Nitrophenol	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Nitrophenol	ND	0.089	0.29		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Pentachlorophenol	ND	0.075	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Phenanthrene	ND	0.080	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Phenol	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Pyrene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Pyridine	ND	0.093	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4,6-Trichlorophenol	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Surr: 2-Fluorophenol	52.9	0	28.3-102		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: Phenol-d5	54.3	0	35.7-103		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: 2,4,6-Tribromophenol	55.2	0	35.2-108		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: Nitrobenzene-d5	55.9		24-118		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: 2-Fluorobiphenyl	56.8		35.4-111		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: 4-Terphenyl-d14	39.2		15-91.7		%Rec	1	5/25/2016 3:20:41 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	6.99	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Toluene	5.45	0.210	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Ethylbenzene	1.01	0.234	1.74	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.292	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,4-Trimethylbenzene	0.600	0.295	1.74	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,3,5-Trimethylbenzene	0.374	0.287	1.74	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dichloroethane (EDC)	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dibromoethane (EDB)	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Naphthalene	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1-Methylnaphthalene	ND	0.198	3.48		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Methylnaphthalene	ND	0.458	3.48		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Acetone	7.20	0.515	8.70	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Bromobenzene	ND	0.177	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Bromodichloromethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Bromoform	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (8-10')
Project: SWMU 10
Collection Date: 5/16/2016 4:30:00 PM
Lab ID: 1605874-002
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.313	2.61		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Butanone	ND	0.627	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Carbon disulfide	ND	0.643	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Carbon tetrachloride	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chlorobenzene	ND	0.200	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chloroethane	ND	0.321	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chloroform	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chloromethane	ND	0.441	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Chlorotoluene	ND	0.296	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
4-Chlorotoluene	ND	0.289	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
cis-1,2-DCE	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
cis-1,3-Dichloropropene	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.185	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Dibromochloromethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Dibromomethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dichlorobenzene	ND	0.253	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,3-Dichlorobenzene	ND	0.321	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,4-Dichlorobenzene	ND	0.326	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Dichlorodifluoromethane	ND	1.02	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1-Dichloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1-Dichloroethene	ND	0.285	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dichloropropane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,3-Dichloropropane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2,2-Dichloropropane	ND	0.220	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1-Dichloropropene	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Hexachlorobutadiene	ND	0.397	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Hexanone	ND	0.433	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Isopropylbenzene	ND	0.219	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
4-Isopropyltoluene	ND	0.326	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
4-Methyl-2-pentanone	ND	3.48	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Methylene chloride	ND	1.74	2.61		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
n-Butylbenzene	ND	0.424	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
n-Propylbenzene	ND	0.311	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
sec-Butylbenzene	ND	0.309	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Styrene	ND	0.222	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
tert-Butylbenzene	ND	0.254	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Tetrachloroethene (PCE)	ND	0.229	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (8-10')
Project: SWMU 10
Collection Date: 5/16/2016 4:30:00 PM
Lab ID: 1605874-002
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.176	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
trans-1,3-Dichloropropene	ND	0.211	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.421	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.528	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,1-Trichloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,2-Trichloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Trichloroethene (TCE)	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Trichlorofluoromethane	ND	0.219	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,3-Trichloropropane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Vinyl chloride	ND	0.458	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Xylenes, Total	2.70	0.693	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
Surr: Dibromofluoromethane	91.9	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
Surr: Toluene-d8	97.4	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	1.0	0.50	3.3	J	mg/Kg-dr	1	5/23/2016 5:57:16 PM	C34413
Surr: BFB	95.5	0	70-130		%Rec	1	5/23/2016 5:57:16 PM	C34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (18-20')
Project: SWMU 10
Collection Date: 5/16/2016 4:40:00 PM
Lab ID: 1605874-003 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.0	11		mg/Kg-dr	1	5/24/2016 11:16:23 AM	25449
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/24/2016 11:16:23 AM	25449
Surr: DNOP	99.7	0	70-130		%Rec	1	5/24/2016 11:16:23 AM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0011	0.00067	0.039	J	mg/Kg-dr	1	5/24/2016 12:53:02 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.9	1.4	2.9	J	mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Arsenic	2.0	0.85	2.9	J	mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Barium	1000	0.29	0.59		mg/Kg-dr	5	6/1/2016 11:39:13 AM	25586
Beryllium	0.86	0.0054	0.17		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Cadmium	ND	0.074	0.12		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Chromium	16	0.14	0.35		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Cobalt	8.3	0.044	0.35		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Iron	19000	120	300		mg/Kg-dr	100	6/16/2016 8:23:05 AM	25586
Lead	2.6	0.20	0.29		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Manganese	690	0.26	0.58		mg/Kg-dr	5	5/26/2016 3:16:43 PM	25447
Nickel	15	0.13	0.58		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Selenium	ND	1.3	2.9		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Silver	ND	0.037	0.29		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Vanadium	21	0.040	2.9		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Zinc	28	0.66	2.9		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Acenaphthylene	ND	0.094	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benz(a)anthracene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(a)pyrene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzoic acid	ND	0.095	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzyl alcohol	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (18-20')
Project: SWMU 10
Collection Date: 5/16/2016 4:40:00 PM
Lab ID: 1605874-003
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.094	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Carbazole	ND	0.078	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Chloroaniline	ND	0.13	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Chloronaphthalene	ND	0.091	0.29		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Chlorophenol	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Chrysene	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Di-n-butyl phthalate	ND	0.086	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Di-n-octyl phthalate	ND	0.098	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Dibenz(a,h)anthracene	ND	0.093	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,2-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,3-Dichlorobenzene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,4-Dichlorobenzene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
3,3´-Dichlorobenzidine	ND	0.085	0.29		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Diethyl phthalate	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dimethylphenol	ND	0.12	0.35		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.070	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dinitrophenol	ND	0.076	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Fluorene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachlorobenzene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachloroethane	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1-Methylnaphthalene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Methylnaphthalene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Methylphenol	ND	0.096	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
3+4-Methylphenol	ND	0.083	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (18-20')
Project: SWMU 10
Collection Date: 5/16/2016 4:40:00 PM
Lab ID: 1605874-003
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Nitroaniline	ND	0.081	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Nitrophenol	ND	0.088	0.29		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Pentachlorophenol	ND	0.074	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Phenanthrene	ND	0.078	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Phenol	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Pyrene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Pyridine	ND	0.091	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4,6-Trichlorophenol	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Surr: 2-Fluorophenol	52.2	0	28.3-102		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: Phenol-d5	53.4	0	35.7-103		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: 2,4,6-Tribromophenol	69.2	0	35.2-108		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: Nitrobenzene-d5	55.3		24-118		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: 2-Fluorobiphenyl	58.9		35.4-111		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: 4-Terphenyl-d14	55.1		15-91.7		%Rec	1	5/25/2016 3:50:57 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	10.2	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Toluene	7.64	0.260	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Ethylbenzene	1.55	0.290	2.16	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.362	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,4-Trimethylbenzene	1.20	0.366	2.16	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,3,5-Trimethylbenzene	0.744	0.356	2.16	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Naphthalene	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1-Methylnaphthalene	0.323	0.245	4.31	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Methylnaphthalene	ND	0.567	4.31		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Acetone	7.78	0.638	10.8	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Bromobenzene	ND	0.219	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Bromodichloromethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Bromoform	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (18-20')
Project: SWMU 10
Collection Date: 5/16/2016 4:40:00 PM
Lab ID: 1605874-003
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.388	3.23		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Butanone	ND	0.777	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Carbon disulfide	ND	0.797	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Carbon tetrachloride	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chlorobenzene	ND	0.247	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chloroethane	ND	0.398	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chloroform	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chloromethane	ND	0.546	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Chlorotoluene	ND	0.367	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
4-Chlorotoluene	ND	0.358	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
cis-1,2-DCE	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
cis-1,3-Dichloropropene	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.229	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Dibromochloromethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Dibromomethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dichlorobenzene	ND	0.314	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,3-Dichlorobenzene	ND	0.398	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,4-Dichlorobenzene	ND	0.403	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Dichlorodifluoromethane	ND	1.26	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1-Dichloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1-Dichloroethene	ND	0.353	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dichloropropane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,3-Dichloropropane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2,2-Dichloropropane	ND	0.272	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1-Dichloropropene	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Hexachlorobutadiene	ND	0.491	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Hexanone	ND	0.537	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Isopropylbenzene	ND	0.271	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
4-Isopropyltoluene	ND	0.404	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
4-Methyl-2-pentanone	ND	4.31	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Methylene chloride	ND	2.16	3.23		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
n-Butylbenzene	ND	0.525	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
n-Propylbenzene	ND	0.386	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
sec-Butylbenzene	ND	0.383	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Styrene	ND	0.275	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
tert-Butylbenzene	ND	0.315	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Tetrachloroethene (PCE)	ND	0.283	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-18 (18-20')
Project: SWMU 10
Collection Date: 5/16/2016 4:40:00 PM
Lab ID: 1605874-003
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.218	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
trans-1,3-Dichloropropene	ND	0.261	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.522	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.654	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,1-Trichloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,2-Trichloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Trichloroethene (TCE)	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Trichlorofluoromethane	ND	0.271	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,3-Trichloropropane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Vinyl chloride	ND	0.567	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Xylenes, Total	4.47	0.859	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
Surr: Dibromofluoromethane	93.4	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.66	0.59	3.9	J	mg/Kg-dr	1	5/23/2016 6:25:37 PM	C34413
Surr: BFB	98.0	0	70-130		%Rec	1	5/23/2016 6:25:37 PM	C34413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:21	WG875269

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	0.0805	J	0.0390	0.250	1	05/27/2016 15:06	WG875172

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:21	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0983	J	0.0390	0.250	1	05/27/2016 15:07	WG875172

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:21	WG875269

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	0.0587	J	0.0390	0.250	1	05/27/2016 15:08	WG875172

Method Blank (MB)

(MB) R3140032-1 05/26/16 15:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L836517-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836517-01 05/26/16 15:08 • (DUP) R3140032-4 05/26/16 15:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Chromium,Hexavalent	ND	ND	1	0.000		20

L837120-05 Original Sample (OS) • Duplicate (DUP)

(OS) L837120-05 05/26/16 15:28 • (DUP) R3140032-8 05/26/16 15:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140032-2 05/26/16 15:04 • (LCSD) R3140032-3 05/26/16 15:04

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chromium,Hexavalent	56.9	56.6	56.6	99.0	99.0	80.0-120			0.000	20

L836517-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836517-01 05/26/16 15:08 • (MS) R3140032-5 05/26/16 15:10 • (MSD) R3140032-6 05/26/16 15:10

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	3.72	3.72	9.00	9.00	1	75.0-125	J6	J6	0.000	20

Method Blank (MB)

(MB) R3140277-1 05/27/16 14:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140277-2 05/27/16 14:53 • (LCSD) R3140277-3 05/27/16 14:55

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Cyanide	48.4	55.2	67.6	114	140	50.0-150			20.0	20

L836952-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836952-07 05/27/16 15:00 • (MS) R3140277-4 05/27/16 15:01 • (MSD) R3140277-5 05/27/16 15:02

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Cyanide	3.33	0.0400	3.53	3.32	105	98.0	1	80.0-120			6.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **1605874-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **25449**	RunNo: **34433**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1061810** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	11	56.59	0	100	33.9	141			
Surr: DNOP	5.6		5.659		99.4	70	130			

Sample ID **1605874-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **25449**	RunNo: **34433**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1061811** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	11	56.53	0	99.4	33.9	141	1.02	20	
Surr: DNOP	5.6		5.653		98.4	70	130	0	0	

Sample ID **LCS-25449**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **25449**	RunNo: **34433**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1061812** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	62.6	124			
Surr: DNOP	5.5		5.000		109	70	130			

Sample ID **MB-25449**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **25449**	RunNo: **34433**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1061813** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	70	130			

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS-25468**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063539** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.2	2.00	10.00	0	102	70	130			
Toluene	11.1	2.00	10.00	0	111	70	130			
Chlorobenzene	11.1	2.00	10.00	0	111	70	130			
1,1-Dichloroethene	10.3	2.00	10.00	0	103	68	129			
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.00		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.76		10.00		87.6	70	130			
Surr: Toluene-d8	9.90		10.00		99.0	70	130			

Sample ID **LCSD-25468**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063540** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.3	2.00	10.00	0	103	70	130	1.08	0	
Toluene	11.2	2.00	10.00	0	112	70	130	0.629	0	
Chlorobenzene	11.3	2.00	10.00	0	113	70	130	1.96	0	
1,1-Dichloroethene	10.4	2.00	10.00	0	104	68	129	1.16	0	
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130	0.295	0	
Surr: 1,2-Dichloroethane-d4	8.93		10.00		89.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.1		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	8.72		10.00		87.2	70	130	0	0	
Surr: Toluene-d8	9.86		10.00		98.6	70	130	0	0	

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.00								
Toluene	ND	2.00								
Ethylbenzene	ND	2.00								
Methyl tert-butyl ether (MTBE)	ND	2.00								
1,2,4-Trimethylbenzene	ND	2.00								
1,3,5-Trimethylbenzene	ND	2.00								
1,2-Dichloroethane (EDC)	ND	2.00								
1,2-Dibromoethane (EDB)	ND	2.00								
Naphthalene	ND	2.00								
1-Methylnaphthalene	ND	4.00								

Qualifiers:

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.00								
Acetone	ND	10.0								
Bromobenzene	ND	2.00								
Bromodichloromethane	ND	2.00								
Bromoform	ND	2.00								
Bromomethane	ND	3.00								
2-Butanone	ND	10.0								
Carbon disulfide	ND	10.0								
Carbon tetrachloride	ND	2.00								
Chlorobenzene	ND	2.00								
Chloroethane	ND	2.00								
Chloroform	ND	2.00								
Chloromethane	ND	2.00								
2-Chlorotoluene	ND	2.00								
4-Chlorotoluene	ND	2.00								
cis-1,2-DCE	ND	2.00								
cis-1,3-Dichloropropene	ND	2.00								
1,2-Dibromo-3-chloropropane	ND	2.00								
Dibromochloromethane	ND	2.00								
Dibromomethane	ND	2.00								
1,2-Dichlorobenzene	ND	2.00								
1,3-Dichlorobenzene	ND	2.00								
1,4-Dichlorobenzene	ND	2.00								
Dichlorodifluoromethane	ND	2.00								
1,1-Dichloroethane	ND	2.00								
1,1-Dichloroethene	ND	2.00								
1,2-Dichloropropane	ND	2.00								
1,3-Dichloropropane	ND	2.00								
2,2-Dichloropropane	ND	2.00								
1,1-Dichloropropene	ND	2.00								
Hexachlorobutadiene	ND	2.00								
2-Hexanone	ND	10.0								
Isopropylbenzene	ND	2.00								
4-Isopropyltoluene	ND	2.00								
4-Methyl-2-pentanone	ND	10.0								
Methylene chloride	ND	3.00								
n-Butylbenzene	ND	2.00								
n-Propylbenzene	ND	2.00								
sec-Butylbenzene	ND	2.00								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	2.00								
tert-Butylbenzene	ND	2.00								
1,1,1,2-Tetrachloroethane	ND	2.00								
1,1,2,2-Tetrachloroethane	ND	2.00								
Tetrachloroethene (PCE)	ND	2.00								
trans-1,2-DCE	ND	2.00								
trans-1,3-Dichloropropene	ND	2.00								
1,2,3-Trichlorobenzene	ND	2.00								
1,2,4-Trichlorobenzene	ND	2.00								
1,1,1-Trichloroethane	ND	2.00								
1,1,2-Trichloroethane	ND	2.00								
Trichloroethene (TCE)	ND	2.00								
Trichlorofluoromethane	ND	2.00								
1,2,3-Trichloropropane	ND	2.00								
Vinyl chloride	ND	2.00								
Xylenes, Total	ND	2.00								
Surr: 1,2-Dichloroethane-d4	8.94		10.00		89.4	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.80		10.00		88.0	70	130			
Surr: Toluene-d8	9.82		10.00		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25469**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.15	0.50								J
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	0.12	0.40								J
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	0.087	0.40								J
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25469**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.0		3.330		60.1	28.3	102			
Surr: Phenol-d5	2.2		3.330		65.9	35.7	103			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.8	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		68.4	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		73.2	35.4	111			
Surr: 4-Terphenyl-d14	1.1		1.670		64.4	15	91.7			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-25469**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063512** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	70.0	45.8	99.8			
4-Chloro-3-methylphenol	2.2	0.50	3.330	0	66.5	51.5	103			
2-Chlorophenol	1.8	0.20	3.330	0	54.1	46.5	105			
1,4-Dichlorobenzene	0.86	0.20	1.670	0	51.3	45.5	103			
2,4-Dinitrotoluene	1.1	0.50	1.670	0	66.9	36	87.2			
N-Nitrosodi-n-propylamine	0.80	0.20	1.670	0	48.1	47.3	104			
4-Nitrophenol	2.2	0.25	3.330	0	65.7	47.3	95.3			
Pentachlorophenol	1.9	0.40	3.330	0	56.6	38.7	89.3			
Phenol	1.8	0.20	3.330	0	54.5	47.8	106			
Pyrene	1.2	0.20	1.670	0	72.6	33.4	105			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	61.4	50.4	115			
Surr: 2-Fluorophenol	1.6		3.330		47.4	28.3	102			
Surr: Phenol-d5	1.9		3.330		56.0	35.7	103			
Surr: 2,4,6-Tribromophenol	2.2		3.330		66.3	35.2	108			
Surr: Nitrobenzene-d5	1.0		1.670		59.7	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		70.2	35.4	111			
Surr: 4-Terphenyl-d14	0.74		1.670		44.5	15	91.7			

Sample ID **1605874-001bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063528** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.0	0.24	2.000	0	50.7	39.3	86.4			
4-Chloro-3-methylphenol	2.0	0.60	3.988	0	51.1	37.5	96.4			
2-Chlorophenol	1.8	0.24	3.988	0	45.9	37.4	90.6			
1,4-Dichlorobenzene	0.82	0.24	2.000	0	40.8	31.7	85			
2,4-Dinitrotoluene	0.89	0.60	2.000	0	44.6	26.4	86			
N-Nitrosodi-n-propylamine	0.85	0.24	2.000	0	42.7	43.5	83			S
4-Nitrophenol	1.9	0.30	3.988	0	48.0	32.7	98			
Pentachlorophenol	1.7	0.48	3.988	0	42.3	26.6	87.4			
Phenol	1.7	0.24	3.988	0	42.6	40.5	85.3			
Pyrene	0.95	0.24	2.000	0	47.3	23.2	93.9			
1,2,4-Trichlorobenzene	0.93	0.24	2.000	0	46.5	38.7	99			
Surr: 2-Fluorophenol	1.6		3.988		40.7	28.3	102			
Surr: Phenol-d5	1.8		3.988		45.2	35.7	103			
Surr: 2,4,6-Tribromophenol	2.0		3.988		50.6	35.2	108			
Surr: Nitrobenzene-d5	0.93		2.000		46.7	24	118			
Surr: 2-Fluorobiphenyl	0.94		2.000		46.9	35.4	111			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **1605874-001bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063528** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.86		2.000		42.8	15	91.7			

Sample ID **1605874-001bmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063529** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.96	0.24	2.006	0	47.7	39.3	86.4	5.78	30.2	
4-Chloro-3-methylphenol	1.9	0.60	4.000	0	47.0	37.5	96.4	8.21	37.2	
2-Chlorophenol	1.7	0.24	4.000	0	42.3	37.4	90.6	7.83	48	
1,4-Dichlorobenzene	0.81	0.24	2.006	0	40.1	31.7	85	1.33	40.6	
2,4-Dinitrotoluene	0.84	0.60	2.006	0	42.1	26.4	86	5.46	47.7	
N-Nitrosodi-n-propylamine	0.82	0.24	2.006	0	40.7	43.5	83	4.54	52.5	S
4-Nitrophenol	1.8	0.30	4.000	0	43.9	32.7	98	8.61	36.6	
Pentachlorophenol	1.7	0.48	4.000	0	41.8	26.6	87.4	0.917	65.5	
Phenol	1.8	0.24	4.000	0	44.0	40.5	85.3	3.55	44	
Pyrene	1.0	0.24	2.006	0	50.2	23.2	93.9	6.24	42.1	
1,2,4-Trichlorobenzene	0.82	0.24	2.006	0	40.8	38.7	99	12.6	31.5	
Surr: 2-Fluorophenol	1.5		4.000		36.5	28.3	102	0	0	
Surr: Phenol-d5	1.8		4.000		44.9	35.7	103	0	0	
Surr: 2,4,6-Tribromophenol	1.9		4.000		47.7	35.2	108	0	0	
Surr: Nitrobenzene-d5	0.83		2.006		41.3	24	118	0	0	
Surr: 2-Fluorobiphenyl	0.93		2.006		46.6	35.4	111	0	0	
Surr: 4-Terphenyl-d14	0.69		2.006		34.2	15	91.7	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25448**	SampType: **MBLK**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID: **25448**		RunNo: **34452**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1062465**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00083	0.033								J

Sample ID	**LCS-25448**	SampType: **LCS**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID: **25448**		RunNo: **34452**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1062466**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	110	80	120			

Sample ID	**1605874-001BMS**	SampType: **MS**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID: **25448**		RunNo: **34452**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1062468**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.23	0.039	0.1991	0.004404	114	75	125			

Sample ID	**1605874-001BMSD**	SampType: **MSD**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID: **25448**		RunNo: **34452**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1062472**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.24	0.039	0.1988	0.004404	116	75	125	1.19	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25447**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**25447**	RunNo:	**34439**					
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1061954**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Manganese	0.047	0.10								J
Nickel	ND	0.50								
Selenium	1.3	2.5								J
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	**LCS-25447**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID:	**25447**	RunNo:	**34439**					
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1061955**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	90.0	80	120			
Arsenic	24	2.5	25.00	0	95.3	80	120			
Beryllium	24	0.15	25.00	0	97.0	80	120			
Cadmium	24	0.10	25.00	0	94.4	80	120			
Chromium	23	0.30	25.00	0	93.1	80	120			
Cobalt	23	0.30	25.00	0	90.9	80	120			
Lead	23	0.25	25.00	0	91.3	80	120			
Manganese	24	0.10	25.00	0	94.1	80	120			
Nickel	23	0.50	25.00	0	92.2	80	120			
Selenium	24	2.5	25.00	0	97.6	80	120			
Silver	4.7	0.25	5.000	0	93.8	80	120			
Vanadium	24	2.5	25.00	0	95.9	80	120			
Zinc	24	2.5	25.00	0	94.2	80	120			

Sample ID	**1605874-001BMS**	SampType:	**MS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID:	**25447**	RunNo:	**34511**					
Prep Date:	**5/23/2016**	Analysis Date:	**5/26/2016**	SeqNo:	**1064332**	Units:	**mg/Kg-dry**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	12	3.0	29.62	2.721	29.8	75	125			S
Arsenic	24	3.0	29.62	1.831	75.9	75	125			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1605874-001BMS**	SampType:	**MS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID:	**25447**		RunNo:	**34511**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/26/2016**		SeqNo:	**1064332**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	24	0.18	29.62	1.062	77.8	75	125			
Cadmium	23	0.12	29.62	0	77.9	75	125			
Chromium	32	0.36	29.62	8.795	79.2	75	125			
Cobalt	25	0.36	29.62	4.668	69.2	75	125			S
Lead	25	0.30	29.62	5.211	67.0	75	125			S
Manganese	230	0.12	29.62	204.5	74.6	75	125			S
Nickel	30	0.59	29.62	8.706	72.6	75	125			S
Selenium	20	3.0	29.62	0	68.2	75	125			S
Silver	4.8	0.30	5.925	0	80.6	75	125			
Vanadium	41	3.0	29.62	16.52	84.1	75	125			
Zinc	38	3.0	29.62	14.74	78.1	75	125			

Sample ID	**1605874-001BMSD**	SampType:	**MSD**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID:	**25447**		RunNo:	**34511**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/26/2016**		SeqNo:	**1064333**	Units:	**mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	11	3.0	29.74	2.721	27.2	75	125	6.60	20	S
Arsenic	23	3.0	29.74	1.831	71.4	75	125	5.26	20	S
Beryllium	23	0.18	29.74	1.062	73.6	75	125	4.92	20	S
Cadmium	22	0.12	29.74	0	74.6	75	125	3.97	20	S
Chromium	32	0.36	29.74	8.795	78.7	75	125	0.220	20	
Cobalt	24	0.36	29.74	4.668	66.6	75	125	2.79	20	S
Lead	24	0.30	29.74	5.211	63.9	75	125	3.41	20	S
Manganese	230	0.12	29.74	204.5	74.4	75	125	0.0216	20	S
Nickel	30	0.59	29.74	8.706	71.7	75	125	0.608	20	S
Selenium	20	3.0	29.74	0	66.2	75	125	2.62	20	S
Silver	4.7	0.30	5.948	0	79.6	75	125	0.792	20	
Vanadium	41	3.0	29.74	16.52	82.1	75	125	1.20	20	
Zinc	38	3.0	29.74	14.74	79.6	75	125	1.40	20	

Sample ID	**MB-25586**	SampType:	**MBLK**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**PBS**	Batch ID:	**25586**		RunNo:	**34597**				
Prep Date:	**5/31/2016**	Analysis Date:	**6/1/2016**		SeqNo:	**1067058**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.10								

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-25586**	SampType: **LCS**			TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID: **25586**			RunNo: **34597**					
Prep Date:	**5/31/2016**	Analysis Date: **6/1/2016**			SeqNo: **1067059**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	22	0.10	25.00	0	88.8	80	120			

Sample ID	**1605874-001BMS**	SampType: **MS**			TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID: **25586**			RunNo: **34597**					
Prep Date:	**5/31/2016**	Analysis Date: **6/1/2016**			SeqNo: **1067131**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	190	0.24	29.62	133.9	175	75	125			S

Sample ID	**1605874-001BMSD**	SampType: **MSD**			TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**SWMU 10-18 (2-2.5')**	Batch ID: **25586**			RunNo: **34597**					
Prep Date:	**5/31/2016**	Analysis Date: **6/1/2016**			SeqNo: **1067132**		Units: **mg/Kg-dry**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	410	0.24	29.74	133.9	923	75	125	74.9	20	RS

Sample ID	**MB-25586**	SampType: **MBLK**			TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID: **25586**			RunNo: **34951**					
Prep Date:	**5/31/2016**	Analysis Date: **6/16/2016**			SeqNo: **1079711**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	2.0	2.5								J

Sample ID	**LCS-25586**	SampType: **LCS**			TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID: **25586**			RunNo: **34951**					
Prep Date:	**5/31/2016**	Analysis Date: **6/16/2016**			SeqNo: **1079712**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	25	2.5	25.00	0	99.4	80	120			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605874**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **C34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		100	70	130			

Sample ID **2.5ug gro icv**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **C34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	62.9	123			
Surr: BFB	510		500.0		102	70	130			

Sample ID **1605874-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **C34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061611** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.5	17.62	1.536	103	52.3	132			
Surr: BFB	340		352.3		97.3	70	130			

Sample ID **1605874-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-18 (2-2.5')**	Batch ID: **C34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061612** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.5	17.62	1.536	106	52.3	132	2.16	20	
Surr: BFB	350		352.3		98.6	70	130	0	0	

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1605874 RcptNo: 1

Received by/date: 05/18/16

Logged By: **Lindsay Mangin** 5/18/2016 4:00:00 PM

Completed By: **Lindsay Mangin** 5/19/2016 6:52:18 AM

Reviewed By: 05/19/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605874	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED LIST)				Air Bubbles (Y or N)
5-16-16	1620	SOIL	SWMU 10-18 (2-2.5')	JARS-3	NEAT	-001			✓							✓	✓	✓				
				VIALS-2	MeOH	-001										✓						
				VIALS-2	SOBI	-001										✓						
	1630		SWMU 10-18 (8-10')	JARS-3	NEAT	-002			✓							✓	✓	✓				
				VIALS-2	MeOH	-002										✓						
				VIALS-2	SOBI	-002										✓						
	1640		SWMU 10-18 (18-20')	JARS-3	NEAT	-003			✓							✓	✓	✓				
				VIALS-2	MeOH	-003										✓						
				VIALS-2	SOBI	-003										✓						

Date	Time	Relinquished by	Received by	Date	Time
5-17-16	0730			5/17/16	800
5/17/16	1400			05/18/16	1600

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 07, 2016

Ed Riege

Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1605875

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 8 sample(s) on 5/18/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued May 28, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (8-10')
Project: SWMU 10
Collection Date: 5/17/2016 1:25:00 PM
Lab ID: 1605875-001
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	2000	46	130		mg/Kg-dr	10	5/24/2016 4:44:29 PM	25449
Motor Oil Range Organics (MRO)	ND	640	640		mg/Kg-dr	10	5/24/2016 4:44:29 PM	25449
Surr: DNOP	0	0	70-130	S	%Rec	10	5/24/2016 4:44:29 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	21	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.23	0.00071	0.041		mg/Kg-dr	1	5/24/2016 12:54:49 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.8	1.5	3.1	J	mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Arsenic	3.9	0.91	3.1		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Barium	410	0.12	0.25		mg/Kg-dr	2	6/2/2016 3:20:30 PM	25586
Beryllium	1.2	0.0058	0.19		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Cadmium	ND	0.079	0.13		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Chromium	15	0.16	0.38		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Cobalt	5.6	0.048	0.38		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Iron	22000	120	310		mg/Kg-dr	100	6/16/2016 8:24:13 AM	25586
Lead	2.8	0.22	0.31		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Manganese	370	0.11	0.25		mg/Kg-dr	2	5/24/2016 3:11:58 PM	25447
Nickel	11	0.14	0.63		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Selenium	ND	1.4	3.1		mg/Kg-dr	1	5/26/2016 3:25:04 PM	25447
Silver	ND	0.040	0.31		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Vanadium	26	0.044	3.1		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Zinc	23	0.71	3.1		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Acenaphthylene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Aniline	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Anthracene	ND	0.084	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Azobenzene	ND	0.15	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benz(a)anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(a)pyrene	ND	0.096	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzoic acid	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzyl alcohol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Bis(2-chloroethoxy)methane	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (8-10')
Project: SWMU 10
Collection Date: 5/17/2016 1:25:00 PM
Lab ID: 1605875-001
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.093	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Butyl benzyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Carbazole	ND	0.085	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Chloro-3-methylphenol	ND	0.15	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Chloroaniline	ND	0.14	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2-Chloronaphthalene	ND	0.099	0.32		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2-Chlorophenol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Chrysene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Di-n-butyl phthalate	ND	0.094	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Di-n-octyl phthalate	ND	0.11	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Dibenz(a,h)anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,2-Dichlorobenzene	ND	0.097	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,3-Dichlorobenzene	ND	0.098	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,4-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
3,3´-Dichlorobenzidine	ND	0.093	0.32		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Diethyl phthalate	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dichlorophenol	ND	0.12	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dimethylphenol	4.3	1.4	3.8		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.076	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dinitrophenol	ND	0.084	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Fluoranthene	ND	0.073	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Fluorene	1.5	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachlorobenzene	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachlorobutadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1-Methylnaphthalene	11	1.3	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
2-Methylnaphthalene	20	1.5	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
2-Methylphenol	13	1.1	5.1		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
3+4-Methylphenol	24	0.91	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (8-10')
Project: SWMU 10
Collection Date: 5/17/2016 1:25:00 PM
Lab ID: 1605875-001
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Naphthalene	5.0	1.2	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
3-Nitroaniline	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Nitroaniline	ND	0.089	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Nitrobenzene	ND	0.13	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2-Nitrophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Nitrophenol	ND	0.096	0.32		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Pentachlorophenol	ND	0.081	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Phenanthrene	3.2	0.086	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Phenol	30	0.95	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
Pyrene	0.27	0.095	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Pyridine	ND	0.10	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,2,4-Trichlorobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4,5-Trichlorophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Surr: 2-Fluorophenol	49.0	0	28.3-102		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: Phenol-d5	63.0	0	35.7-103		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: 2,4,6-Tribromophenol	40.1	0	35.2-108		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: Nitrobenzene-d5	71.7		24-118		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: 2-Fluorobiphenyl	59.1		35.4-111		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: 4-Terphenyl-d14	49.9		15-91.7		%Rec	1	5/25/2016 4:21:18 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	3.7	0.69	0.86		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Toluene	36	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Ethylbenzene	9.6	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.54	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,4-Trimethylbenzene	25	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,3,5-Trimethylbenzene	8.5	0.12	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.45	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.12	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Naphthalene	24	0.27	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1-Methylnaphthalene	41	0.38	6.9		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Methylnaphthalene	73	0.37	6.9		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Acetone	ND	2.2	26		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Bromobenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Bromodichloromethane	ND	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Bromoform	ND	0.21	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (8-10')
Project: SWMU 10
Collection Date: 5/17/2016 1:25:00 PM
Lab ID: 1605875-001
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromomethane	ND	0.63	5.2		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Butanone	ND	0.98	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Carbon disulfide	ND	0.57	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Carbon tetrachloride	ND	0.11	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chlorobenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chloroethane	ND	0.34	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chloroform	ND	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chloromethane	ND	0.15	5.2		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Chlorotoluene	ND	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
4-Chlorotoluene	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
cis-1,2-DCE	ND	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
cis-1,3-Dichloropropene	ND	0.16	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.53	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Dibromochloromethane	ND	0.16	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Dibromomethane	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dichlorobenzene	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,3-Dichlorobenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,4-Dichlorobenzene	ND	0.21	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Dichlorodifluoromethane	ND	0.53	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1-Dichloroethane	ND	0.093	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1-Dichloroethene	ND	0.56	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dichloropropane	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,3-Dichloropropane	ND	0.19	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2,2-Dichloropropane	ND	0.098	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1-Dichloropropene	ND	0.14	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Hexachlorobutadiene	ND	0.21	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Hexanone	ND	0.93	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Isopropylbenzene	2.0	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
4-Isopropyltoluene	0.96	0.15	1.7	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
4-Methyl-2-pentanone	ND	0.50	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Methylene chloride	0.51	0.49	5.2	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
n-Butylbenzene	1.9	0.15	5.2	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
n-Propylbenzene	4.2	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
sec-Butylbenzene	1.1	0.24	1.7	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Styrene	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
tert-Butylbenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.16	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.28	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Tetrachloroethene (PCE)	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (8-10')
Project: SWMU 10
Collection Date: 5/17/2016 1:25:00 PM
Lab ID: 1605875-001
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
trans-1,2-DCE	ND	0.48	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
trans-1,3-Dichloropropene	ND	0.25	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,3-Trichlorobenzene	ND	0.26	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,4-Trichlorobenzene	ND	0.18	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,1-Trichloroethane	ND	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,2-Trichloroethane	ND	0.20	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Trichloroethene (TCE)	ND	0.18	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Trichlorofluoromethane	ND	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,3-Trichloropropane	ND	0.30	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Vinyl chloride	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Xylenes, Total	72	0.33	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Surr: Dibromofluoromethane	96.0		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
Surr: 1,2-Dichloroethane-d4	87.9		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
Surr: Toluene-d8	98.8		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
Surr: 4-Bromofluorobenzene	108		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	1100	26	170		mg/Kg-dr	50	5/23/2016 3:07:10 PM	C34413
Surr: BFB	103	0	70-130		%Rec	50	5/23/2016 3:07:10 PM	C34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (10-12')
Project: SWMU 10
Collection Date: 5/17/2016 4:10:00 PM
Lab ID: 1605875-002
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3500	45	130		mg/Kg-dr	10	5/24/2016 5:28:01 PM	25449
Motor Oil Range Organics (MRO)	ND	630	630		mg/Kg-dr	10	5/24/2016 5:28:01 PM	25449
Surr: DNOP	0	0	70-130	S	%Rec	10	5/24/2016 5:28:01 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	21	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0041	0.00073	0.043	J	mg/Kg-dr	1	5/24/2016 12:56:36 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	3.7	1.5	3.2		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Arsenic	1.9	0.93	3.2	J	mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Barium	250	0.062	0.13		mg/Kg-dr	1	6/1/2016 11:44:48 AM	25586
Beryllium	1.1	0.0059	0.19		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Cadmium	ND	0.081	0.13		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Chromium	10	0.16	0.38		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Cobalt	5.6	0.048	0.38		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Iron	21000	130	320		mg/Kg-dr	100	6/16/2016 8:25:18 AM	25586
Lead	6.0	0.22	0.32		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Manganese	190	0.056	0.13		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Nickel	10	0.14	0.63		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Selenium	ND	1.4	3.2		mg/Kg-dr	1	5/26/2016 3:28:09 PM	25447
Silver	ND	0.040	0.32		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Vanadium	19	0.044	3.2		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Zinc	18	0.72	3.2		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Acenaphthylene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Aniline	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Anthracene	ND	0.084	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Azobenzene	ND	0.15	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benz(a)anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(a)pyrene	ND	0.096	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzoic acid	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzyl alcohol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Bis(2-chloroethoxy)methane	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (10-12')
Project: SWMU 10
Collection Date: 5/17/2016 4:10:00 PM
Lab ID: 1605875-002
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.093	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Butyl benzyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Carbazole	ND	0.085	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Chloro-3-methylphenol	ND	0.15	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Chloroaniline	ND	0.14	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2-Chloronaphthalene	ND	0.099	0.32		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2-Chlorophenol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Chrysene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Di-n-butyl phthalate	ND	0.094	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Di-n-octyl phthalate	ND	0.11	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Dibenz(a,h)anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,2-Dichlorobenzene	ND	0.097	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,3-Dichlorobenzene	ND	0.098	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,4-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
3,3´-Dichlorobenzidine	ND	0.093	0.32		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Diethyl phthalate	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dichlorophenol	ND	0.12	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dimethylphenol	11	1.4	3.8		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.076	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dinitrophenol	ND	0.084	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Fluoranthene	ND	0.073	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Fluorene	2.1	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachlorobenzene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachlorobutadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1-Methylnaphthalene	18	1.3	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
2-Methylnaphthalene	31	1.5	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
2-Methylphenol	24	1.1	5.1		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
3+4-Methylphenol	43	0.91	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (10-12')
Project: SWMU 10
Collection Date: 5/17/2016 4:10:00 PM
Lab ID: 1605875-002
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Naphthalene	8.5	1.2	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
3-Nitroaniline	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Nitroaniline	ND	0.089	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Nitrobenzene	ND	0.13	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2-Nitrophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Nitrophenol	ND	0.096	0.32		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Pentachlorophenol	ND	0.081	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Phenanthrene	5.0	0.086	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Phenol	34	0.95	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
Pyrene	0.33	0.095	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Pyridine	ND	0.10	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,2,4-Trichlorobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4,5-Trichlorophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Surr: 2-Fluorophenol	48.1	0	28.3-102		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: Phenol-d5	54.0	0	35.7-103		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: 2,4,6-Tribromophenol	26.5	0	35.2-108	S	%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: Nitrobenzene-d5	94.6		24-118		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: 2-Fluorobiphenyl	50.3		35.4-111		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: 4-Terphenyl-d14	47.7		15-91.7		%Rec	1	5/25/2016 4:51:35 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	2.2	0.66	0.82		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Toluene	18	0.097	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Ethylbenzene	4.5	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.52	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,4-Trimethylbenzene	13	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,3,5-Trimethylbenzene	4.6	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.43	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Naphthalene	12	0.26	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1-Methylnaphthalene	25	0.37	6.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Methylnaphthalene	42	0.35	6.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Acetone	ND	2.1	25		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Bromobenzene	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Bromodichloromethane	ND	0.096	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Bromoform	ND	0.20	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (10-12')
Project: SWMU 10
Collection Date: 5/17/2016 4:10:00 PM
Lab ID: 1605875-002
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromomethane	ND	0.60	4.9		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Butanone	ND	0.94	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Carbon disulfide	ND	0.54	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Carbon tetrachloride	ND	0.11	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chlorobenzene	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chloroethane	ND	0.33	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chloroform	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chloromethane	ND	0.15	4.9		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Chlorotoluene	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
4-Chlorotoluene	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
cis-1,2-DCE	ND	0.095	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
cis-1,3-Dichloropropene	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.50	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Dibromochloromethane	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Dibromomethane	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dichlorobenzene	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,3-Dichlorobenzene	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,4-Dichlorobenzene	ND	0.20	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Dichlorodifluoromethane	ND	0.51	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1-Dichloroethane	ND	0.089	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1-Dichloroethene	ND	0.54	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dichloropropane	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,3-Dichloropropane	ND	0.19	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2,2-Dichloropropane	ND	0.094	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1-Dichloropropene	ND	0.13	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Hexachlorobutadiene	ND	0.20	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Hexanone	ND	0.89	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Isopropylbenzene	0.92	0.14	1.6	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
4-Isopropyltoluene	0.41	0.15	1.6	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
4-Methyl-2-pentanone	ND	0.48	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Methylene chloride	0.50	0.47	4.9	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
n-Butylbenzene	0.97	0.15	4.9	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
n-Propylbenzene	1.9	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
sec-Butylbenzene	0.49	0.23	1.6	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Styrene	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
tert-Butylbenzene	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.16	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.27	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Tetrachloroethene (PCE)	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (10-12')
Project: SWMU 10
Collection Date: 5/17/2016 4:10:00 PM
Lab ID: 1605875-002
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
trans-1,2-DCE	ND	0.46	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
trans-1,3-Dichloropropene	ND	0.24	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,3-Trichlorobenzene	ND	0.25	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,4-Trichlorobenzene	ND	0.18	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,1-Trichloroethane	ND	0.10	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,2-Trichloroethane	ND	0.19	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Trichloroethene (TCE)	ND	0.18	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Trichlorofluoromethane	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,3-Trichloropropane	ND	0.28	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Vinyl chloride	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Xylenes, Total	34	0.31	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Surr: Dibromofluoromethane	96.3		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
Surr: 1,2-Dichloroethane-d4	90.7		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
Surr: Toluene-d8	101		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
Surr: 4-Bromofluorobenzene	105		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	640	25	160		mg/Kg-dr	50	5/23/2016 3:35:28 PM	C34413
Surr: BFB	101	0	70-130		%Rec	50	5/23/2016 3:35:28 PM	C34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (16-18')
Project: SWMU 10
Collection Date: 5/17/2016 4:25:00 PM
Lab ID: 1605875-003
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	380	4.1	11		mg/Kg-dr	1	5/24/2016 6:11:35 PM	25449
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/24/2016 6:11:35 PM	25449
Surr: DNOP	104	0	70-130		%Rec	1	5/24/2016 6:11:35 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.37	0.00068	0.040		mg/Kg-dr	1	5/24/2016 12:58:23 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.5	1.4	3.0	J	mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Arsenic	2.2	0.87	3.0	J	mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Barium	210	0.058	0.12		mg/Kg-dr	1	6/1/2016 11:47:38 AM	25586
Beryllium	0.87	0.0055	0.18		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Cadmium	ND	0.075	0.12		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Chromium	21	0.15	0.36		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Cobalt	5.5	0.045	0.36		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Iron	17000	120	300		mg/Kg-dr	100	6/16/2016 8:26:23 AM	25586
Lead	5.3	0.21	0.30		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Manganese	750	0.26	0.59		mg/Kg-dr	5	5/26/2016 3:31:06 PM	25447
Nickel	10	0.14	0.59		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:32:29 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Vanadium	18	0.041	3.0		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Zinc	26	0.68	3.0		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(a)pyrene	ND	0.090	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzoic acid	ND	0.099	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (16-18')
Project: SWMU 10
Collection Date: 5/17/2016 4:25:00 PM
Lab ID: 1605875-003
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.088	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.097	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Di-n-butyl phthalate	ND	0.089	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,3-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
3,3´-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dimethylphenol	8.3	1.3	3.6		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Fluorene	0.49	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1-Methylnaphthalene	2.2	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Methylnaphthalene	3.7	0.14	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Methylphenol	17	1.0	4.8		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469
3+4-Methylphenol	26	0.87	2.4		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (16-18')
Project: SWMU 10
Collection Date: 5/17/2016 4:25:00 PM
Lab ID: 1605875-003
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Naphthalene	0.73	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Phenanthrene	1.0	0.081	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Phenol	18	0.90	2.4		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469
Pyrene	0.13	0.090	0.24	J	mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Surr: 2-Fluorophenol	50.5	0	28.3-102		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: Phenol-d5	58.3	0	35.7-103		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: 2,4,6-Tribromophenol	72.8	0	35.2-108		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: Nitrobenzene-d5	59.4		24-118		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: 2-Fluorobiphenyl	75.0		35.4-111		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: 4-Terphenyl-d14	64.8		15-91.7		%Rec	1	5/25/2016 5:21:51 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.36	0.25	0.31		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Toluene	2.3	0.037	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Ethylbenzene	0.63	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.20	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,4-Trimethylbenzene	4.0	0.046	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,3,5-Trimethylbenzene	1.7	0.045	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.16	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.044	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Naphthalene	3.1	0.097	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1-Methylnaphthalene	8.4	0.14	2.5		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Methylnaphthalene	13	0.13	2.5		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Acetone	ND	0.80	9.3		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Bromobenzene	ND	0.050	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Bromodichloromethane	ND	0.036	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Bromoform	ND	0.076	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (16-18')
Project: SWMU 10
Collection Date: 5/17/2016 4:25:00 PM
Lab ID: 1605875-003
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromomethane	ND	0.23	1.9		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Butanone	ND	0.36	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Carbon disulfide	ND	0.21	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Carbon tetrachloride	ND	0.041	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chlorobenzene	ND	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chloroethane	ND	0.12	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chloroform	ND	0.047	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chloromethane	ND	0.055	1.9		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Chlorotoluene	ND	0.046	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
4-Chlorotoluene	ND	0.055	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
cis-1,2-DCE	ND	0.036	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
cis-1,3-Dichloropropene	ND	0.057	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.19	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Dibromochloromethane	ND	0.056	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Dibromomethane	ND	0.054	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dichlorobenzene	ND	0.054	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,3-Dichlorobenzene	ND	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,4-Dichlorobenzene	ND	0.077	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Dichlorodifluoromethane	ND	0.19	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1-Dichloroethane	ND	0.034	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1-Dichloroethene	ND	0.20	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dichloropropane	ND	0.052	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,3-Dichloropropane	ND	0.071	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2,2-Dichloropropane	ND	0.036	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1-Dichloropropene	ND	0.049	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Hexachlorobutadiene	ND	0.076	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Hexanone	ND	0.34	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Isopropylbenzene	0.17	0.053	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
4-Isopropyltoluene	0.34	0.056	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
4-Methyl-2-pentanone	ND	0.18	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Methylene chloride	ND	0.18	1.9		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
n-Butylbenzene	0.28	0.055	1.9	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
n-Propylbenzene	0.36	0.048	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
sec-Butylbenzene	0.16	0.086	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Styrene	ND	0.056	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
tert-Butylbenzene	ND	0.052	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.060	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.10	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Tetrachloroethene (PCE)	ND	0.052	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (16-18')
Project: SWMU 10
Collection Date: 5/17/2016 4:25:00 PM
Lab ID: 1605875-003
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
trans-1,2-DCE	ND	0.17	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
trans-1,3-Dichloropropene	ND	0.091	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,3-Trichlorobenzene	ND	0.093	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,4-Trichlorobenzene	ND	0.067	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,1-Trichloroethane	ND	0.038	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,2-Trichloroethane	ND	0.073	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Trichloroethene (TCE)	ND	0.067	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Trichlorofluoromethane	ND	0.047	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,3-Trichloropropane	ND	0.11	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Vinyl chloride	ND	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Xylenes, Total	7.0	0.12	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Surr: Dibromofluoromethane	97.8		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
Surr: 1,2-Dichloroethane-d4	88.5		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
Surr: Toluene-d8	99.4		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
Surr: 4-Bromofluorobenzene	110		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	220	9.4	62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	C34413
Surr: BFB	104	0	70-130		%Rec	20	5/23/2016 4:03:54 PM	C34413

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (20-22')
Project: SWMU 10
Collection Date: 5/17/2016 4:35:00 PM
Lab ID: 1605875-004 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	3.7	10		mg/Kg-dr	1	5/24/2016 6:55:08 PM	25449
Motor Oil Range Organics (MRO)	ND	52	52		mg/Kg-dr	1	5/24/2016 6:55:08 PM	25449
Surr: DNOP	107	0	70-130		%Rec	1	5/24/2016 6:55:08 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0012	0.00065	0.038	J	mg/Kg-dr	1	5/24/2016 1:00:12 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	3.3	1.3	2.8		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Arsenic	2.7	0.83	2.8	J	mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Barium	750	0.28	0.58		mg/Kg-dr	5	6/1/2016 11:50:23 AM	25586
Beryllium	0.88	0.0052	0.17		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Cadmium	ND	0.072	0.11		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Chromium	12	0.14	0.34		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Cobalt	8.5	0.043	0.34		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Iron	20000	110	290		mg/Kg-dr	100	6/16/2016 8:27:30 AM	25586
Lead	3.5	0.20	0.28		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Manganese	1100	0.25	0.57		mg/Kg-dr	5	5/26/2016 3:35:34 PM	25447
Nickel	14	0.13	0.57		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Selenium	ND	1.2	2.8		mg/Kg-dr	1	5/26/2016 3:36:57 PM	25447
Silver	ND	0.036	0.28		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Vanadium	16	0.039	2.8		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Zinc	27	0.65	2.8		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Acenaphthylene	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Anthracene	ND	0.075	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benz(a)anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(a)pyrene	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(k)fluoranthene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzoic acid	ND	0.094	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzyl alcohol	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469

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Hall Environmental Analysis Laboratory, Inc.

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Project: SWMU 10
Collection Date: 5/17/2016 4:35:00 PM
Lab ID: 1605875-004
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.083	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.092	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Carbazole	ND	0.076	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Chloronaphthalene	ND	0.089	0.28		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Chlorophenol	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Chrysene	ND	0.096	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Di-n-butyl phthalate	ND	0.084	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Di-n-octyl phthalate	ND	0.096	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Dibenz(a,h)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,2-Dichlorobenzene	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,3-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,4-Dichlorobenzene	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
3,3´-Dichlorobenzidine	ND	0.083	0.28		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Diethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.068	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dinitrophenol	ND	0.075	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Fluoranthene	ND	0.065	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachlorobenzene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachloroethane	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Methylnaphthalene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Methylphenol	ND	0.094	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469

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Lab ID: 1605875-004
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
3-Nitroaniline	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Nitroaniline	ND	0.080	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Nitrophenol	ND	0.086	0.28		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Pentachlorophenol	ND	0.073	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Phenanthrene	ND	0.077	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Phenol	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Pyrene	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Pyridine	ND	0.089	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4,6-Trichlorophenol	ND	0.094	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Surr: 2-Fluorophenol	52.6	0	28.3-102		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: Phenol-d5	53.6	0	35.7-103		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: 2,4,6-Tribromophenol	64.3	0	35.2-108		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: Nitrobenzene-d5	55.4		24-118		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: 2-Fluorobiphenyl	59.6		35.4-111		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: 4-Terphenyl-d14	55.3		15-91.7		%Rec	1	5/25/2016 5:52:17 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	8.07	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Toluene	6.45	0.292	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Ethylbenzene	1.38	0.325	2.42	J	µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.406	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,4-Trimethylbenzene	0.821	0.410	2.42	J	µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.399	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Naphthalene	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1-Methylnaphthalene	ND	0.275	4.83		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Methylnaphthalene	ND	0.636	4.83		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Acetone	5.41	0.715	12.1	J	µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Bromobenzene	ND	0.246	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Bromodichloromethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Bromoform	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468

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Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.435	3.62		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Butanone	ND	0.871	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Carbon disulfide	ND	0.893	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Carbon tetrachloride	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chlorobenzene	ND	0.277	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chloroethane	ND	0.446	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chloroform	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chloromethane	ND	0.612	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Chlorotoluene	ND	0.411	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
4-Chlorotoluene	ND	0.402	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
cis-1,2-DCE	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
cis-1,3-Dichloropropene	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.257	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Dibromochloromethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Dibromomethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dichlorobenzene	ND	0.352	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,3-Dichlorobenzene	ND	0.446	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,4-Dichlorobenzene	ND	0.452	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Dichlorodifluoromethane	ND	1.41	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1-Dichloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1-Dichloroethene	ND	0.396	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dichloropropane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,3-Dichloropropane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2,2-Dichloropropane	ND	0.305	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1-Dichloropropene	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Hexachlorobutadiene	ND	0.551	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Hexanone	ND	0.602	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Isopropylbenzene	ND	0.304	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
4-Isopropyltoluene	ND	0.453	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
4-Methyl-2-pentanone	ND	4.83	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Methylene chloride	ND	2.42	3.62		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
n-Butylbenzene	ND	0.588	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
n-Propylbenzene	ND	0.432	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
sec-Butylbenzene	ND	0.429	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Styrene	ND	0.309	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
tert-Butylbenzene	ND	0.353	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Tetrachloroethene (PCE)	ND	0.317	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (20-22')
Project: SWMU 10
Collection Date: 5/17/2016 4:35:00 PM
Lab ID: 1605875-004
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.244	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
trans-1,3-Dichloropropene	ND	0.292	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.585	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.733	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,1-Trichloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,2-Trichloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Trichloroethene (TCE)	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Trichlorofluoromethane	ND	0.304	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,3-Trichloropropane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Vinyl chloride	ND	0.635	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Xylenes, Total	3.56	0.963	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Surr: 1,2-Dichloroethane-d4	97.8	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
Surr: Dibromofluoromethane	90.0	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
Surr: Toluene-d8	97.1	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.52	3.5		mg/Kg-dr	1	5/23/2016 6:54:00 PM	C34413
Surr: BFB	96.7	0	70-130		%Rec	1	5/23/2016 6:54:00 PM	C34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 9:15:00 AM
Lab ID: 1605875-005 **Matrix:** SOIL **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.3	12		mg/Kg-dr	1	5/24/2016 7:16:55 PM	25449
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	5/24/2016 7:16:55 PM	25449
Surr: DNOP	106	0	70-130		%Rec	1	5/24/2016 7:16:55 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0020	0.00069	0.040	J	mg/Kg-dr	1	5/24/2016 1:02:01 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	4.0	1.4	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Arsenic	1.9	0.87	3.0	J	mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Barium	160	0.28	0.58		mg/Kg-dr	5	6/1/2016 11:58:23 AM	25586
Beryllium	1.2	0.0055	0.18		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Cadmium	ND	0.076	0.12		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Chromium	9.3	0.15	0.36		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Cobalt	5.2	0.045	0.36		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Iron	18000	110	290		mg/Kg-dr	100	6/16/2016 8:28:36 AM	25586
Lead	5.1	0.21	0.30		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Manganese	280	0.053	0.12		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Nickel	9.8	0.14	0.60		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Vanadium	17	0.042	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Zinc	17	0.68	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(a)pyrene	ND	0.091	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzoic acid	ND	0.099	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 9:15:00 AM
Lab ID: 1605875-005
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.088	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.098	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Di-n-butyl phthalate	ND	0.089	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,3-Dichlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
3,3´-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Fluorene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1-Methylnaphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Methylnaphthalene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Methylphenol	ND	0.10	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
3+4-Methylphenol	ND	0.087	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 9:15:00 AM
Lab ID: 1605875-005
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Phenanthrene	ND	0.081	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Phenol	ND	0.090	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Pyrene	ND	0.090	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Surr: 2-Fluorophenol	52.3	0	28.3-102		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: Phenol-d5	61.0	0	35.7-103		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: 2,4,6-Tribromophenol	73.7	0	35.2-108		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: Nitrobenzene-d5	64.0		24-118		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: 2-Fluorobiphenyl	66.1		35.4-111		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: 4-Terphenyl-d14	70.1		15-91.7		%Rec	1	5/25/2016 6:22:06 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Toluene	1.09	0.302	2.50	J	µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Ethylbenzene	ND	0.336	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.420	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,4-Trimethylbenzene	ND	0.424	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.412	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Naphthalene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1-Methylnaphthalene	ND	0.284	4.99		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Methylnaphthalene	ND	0.657	4.99		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Acetone	12.1	0.739	12.5	J	µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Bromobenzene	ND	0.254	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Bromodichloromethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Bromoform	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 9:15:00 AM
Lab ID: 1605875-005
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.450	3.75		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Butanone	ND	0.900	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Carbon disulfide	ND	0.924	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Carbon tetrachloride	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chlorobenzene	ND	0.286	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chloroethane	ND	0.461	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chloroform	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chloromethane	ND	0.633	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Chlorotoluene	ND	0.425	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
4-Chlorotoluene	ND	0.415	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
cis-1,2-DCE	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
cis-1,3-Dichloropropene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.266	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Dibromochloromethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Dibromomethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dichlorobenzene	ND	0.364	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,3-Dichlorobenzene	ND	0.461	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,4-Dichlorobenzene	ND	0.467	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Dichlorodifluoromethane	ND	1.46	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1-Dichloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1-Dichloroethene	ND	0.409	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dichloropropane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,3-Dichloropropane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2,2-Dichloropropane	ND	0.315	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1-Dichloropropene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Hexachlorobutadiene	ND	0.569	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Hexanone	ND	0.622	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Isopropylbenzene	ND	0.314	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
4-Isopropyltoluene	ND	0.469	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
4-Methyl-2-pentanone	ND	4.99	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Methylene chloride	ND	2.50	3.75		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
n-Butylbenzene	ND	0.608	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
n-Propylbenzene	ND	0.447	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
sec-Butylbenzene	ND	0.443	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Styrene	ND	0.319	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
tert-Butylbenzene	ND	0.365	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Tetrachloroethene (PCE)	ND	0.328	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 9:15:00 AM
Lab ID: 1605875-005
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.252	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
trans-1,3-Dichloropropene	ND	0.302	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.604	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.757	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,1-Trichloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,2-Trichloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Trichloroethene (TCE)	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Trichlorofluoromethane	ND	0.314	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,3-Trichloropropane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Vinyl chloride	ND	0.657	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Xylenes, Total	ND	0.995	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
Surr: Dibromofluoromethane	91.9	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
Surr: Toluene-d8	97.8	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.64	4.3		mg/Kg-dr	1	5/23/2016 7:22:17 PM	C34413
Surr: BFB	101	0	70-130		%Rec	1	5/23/2016 7:22:17 PM	C34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (12-14')
Project: SWMU 10
Collection Date: 5/17/2016 10:15:00 AM
Lab ID: 1605875-006
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	590	3.9	11		mg/Kg-dr	1	5/24/2016 7:38:32 PM	25449
Motor Oil Range Organics (MRO)	78	55	55		mg/Kg-dr	1	5/24/2016 7:38:32 PM	25449
Surr: DNOP	107	0	70-130		%Rec	1	5/24/2016 7:38:32 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0019	0.00064	0.037	J	mg/Kg-dr	1	5/24/2016 1:03:51 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	6.9	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Arsenic	ND	4.2	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Barium	830	0.28	0.58		mg/Kg-dr	5	6/1/2016 12:01:05 PM	25586
Beryllium	1.1	0.027	0.87		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Cadmium	ND	0.37	0.58		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Chromium	12	0.72	1.7		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Cobalt	6.5	0.22	1.7		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Iron	21000	110	290		mg/Kg-dr	100	6/16/2016 8:34:14 AM	25586
Lead	5.7	1.0	1.4		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Manganese	1200	0.26	0.58		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Nickel	15	0.66	2.9		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Selenium	ND	6.3	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Silver	ND	0.18	1.4		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Vanadium	14	0.20	14	J	mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Zinc	21	3.3	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(a)pyrene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzoic acid	ND	0.095	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzyl alcohol	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (12-14')
Project: SWMU 10
Collection Date: 5/17/2016 10:15:00 AM
Lab ID: 1605875-006
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.093	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Chloronaphthalene	ND	0.090	0.29		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Di-n-butyl phthalate	ND	0.086	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Di-n-octyl phthalate	ND	0.098	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Dibenz(a,h)anthracene	ND	0.093	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,2-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,4-Dichlorobenzene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
3,3´-Dichlorobenzidine	ND	0.084	0.29		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Diethyl phthalate	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dinitrophenol	ND	0.076	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1-Methylnaphthalene	2.1	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Methylnaphthalene	3.0	0.14	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Methylphenol	ND	0.096	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
3+4-Methylphenol	ND	0.083	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (12-14')
Project: SWMU 10
Collection Date: 5/17/2016 10:15:00 AM
Lab ID: 1605875-006
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Naphthalene	0.41	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Nitroaniline	ND	0.081	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Nitrophenol	ND	0.087	0.29		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Pentachlorophenol	ND	0.074	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Phenanthrene	0.61	0.078	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Phenol	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Pyridine	ND	0.091	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4,6-Trichlorophenol	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Surr: 2-Fluorophenol	51.6	0	28.3-102		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: Phenol-d5	60.7	0	35.7-103		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: 2,4,6-Tribromophenol	68.5	0	35.2-108		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: Nitrobenzene-d5	61.3		24-118		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: 2-Fluorobiphenyl	71.6		35.4-111		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: 4-Terphenyl-d14	76.3		15-91.7		%Rec	1	5/25/2016 6:52:36 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.068	0.084		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Toluene	0.16	0.010	0.17	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Ethylbenzene	0.29	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.053	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,4-Trimethylbenzene	3.4	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,3,5-Trimethylbenzene	1.4	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.044	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Naphthalene	2.3	0.026	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1-Methylnaphthalene	7.2	0.038	0.68		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Methylnaphthalene	13	0.036	0.68		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Acetone	ND	0.22	2.5		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Bromobenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Bromodichloromethane	ND	0.0098	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Bromoform	ND	0.021	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (12-14')
Project: SWMU 10
Collection Date: 5/17/2016 10:15:00 AM
Lab ID: 1605875-006
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromomethane	ND	0.062	0.51		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Butanone	ND	0.096	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Carbon disulfide	ND	0.056	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Carbon tetrachloride	ND	0.011	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chlorobenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chloroethane	ND	0.034	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chloroform	ND	0.013	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chloromethane	ND	0.015	0.51		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Chlorotoluene	ND	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
4-Chlorotoluene	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
cis-1,2-DCE	ND	0.0098	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
cis-1,3-Dichloropropene	ND	0.016	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.052	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Dibromochloromethane	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Dibromomethane	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dichlorobenzene	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,3-Dichlorobenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,4-Dichlorobenzene	ND	0.021	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Dichlorodifluoromethane	ND	0.052	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1-Dichloroethane	ND	0.0091	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1-Dichloroethene	ND	0.055	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dichloropropane	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,3-Dichloropropane	ND	0.019	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2,2-Dichloropropane	ND	0.0097	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1-Dichloropropene	ND	0.013	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Hexachlorobutadiene	ND	0.021	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Hexanone	ND	0.092	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Isopropylbenzene	0.14	0.015	0.17	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
4-Isopropyltoluene	0.35	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
4-Methyl-2-pentanone	ND	0.049	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Methylene chloride	0.050	0.049	0.51	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
n-Butylbenzene	0.27	0.015	0.51	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
n-Propylbenzene	0.28	0.013	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
sec-Butylbenzene	0.17	0.023	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Styrene	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
tert-Butylbenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.016	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.027	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Tetrachloroethene (PCE)	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (12-14')
Project: SWMU 10
Collection Date: 5/17/2016 10:15:00 AM
Lab ID: 1605875-006
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
trans-1,2-DCE	ND	0.047	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
trans-1,3-Dichloropropene	ND	0.025	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,3-Trichlorobenzene	ND	0.025	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,4-Trichlorobenzene	ND	0.018	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,1-Trichloroethane	ND	0.010	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,2-Trichloroethane	ND	0.020	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Trichloroethene (TCE)	ND	0.018	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Trichlorofluoromethane	ND	0.013	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,3-Trichloropropane	ND	0.029	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Vinyl chloride	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Xylenes, Total	5.9	0.032	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Surr: Dibromofluoromethane	94.6		70-130		%Rec	5	5/23/2016 4:32:16 PM	D34413
Surr: 1,2-Dichloroethane-d4	89.6		70-130		%Rec	5	5/23/2016 4:32:16 PM	D34413
Surr: Toluene-d8	98.8		70-130		%Rec	5	5/23/2016 4:32:16 PM	D34413
Surr: 4-Bromofluorobenzene	131		70-130	S	%Rec	5	5/23/2016 4:32:16 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	270	2.5	17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	C34413
Surr: BFB	123	0	70-130		%Rec	5	5/23/2016 4:32:16 PM	C34413

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (18-20')
Project: SWMU 10
Collection Date: 5/17/2016 10:25:00 AM
Lab ID: 1605875-007
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.1	11		mg/Kg-dr	1	5/24/2016 8:22:08 PM	25449
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/24/2016 8:22:08 PM	25449
Surr: DNOP	103	0	70-130		%Rec	1	5/24/2016 8:22:08 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.00081	0.00063	0.037	J	mg/Kg-dr	1	5/24/2016 1:05:42 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	3.2	1.3	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Arsenic	3.0	0.82	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Barium	480	0.11	0.22		mg/Kg-dr	2	6/1/2016 12:03:51 PM	25586
Beryllium	1.0	0.0051	0.17		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Cadmium	ND	0.071	0.11		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Chromium	13	0.14	0.33		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Cobalt	7.9	0.042	0.33		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Iron	21000	110	280		mg/Kg-dr	100	6/16/2016 8:35:21 AM	25586
Lead	3.5	0.20	0.28		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Manganese	410	0.099	0.22		mg/Kg-dr	2	5/24/2016 3:42:57 PM	25447
Nickel	15	0.13	0.56		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Selenium	ND	1.2	2.8		mg/Kg-dr	1	5/26/2016 3:52:43 PM	25447
Silver	ND	0.035	0.28		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Vanadium	13	0.039	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Zinc	25	0.64	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.096	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Acenaphthylene	ND	0.091	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Aniline	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Anthracene	ND	0.074	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benz(a)anthracene	ND	0.096	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(a)pyrene	ND	0.084	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(g,h,i)perylene	ND	0.098	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(k)fluoranthene	ND	0.098	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzoic acid	ND	0.092	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzyl alcohol	ND	0.087	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (18-20')
Project: SWMU 10
Collection Date: 5/17/2016 10:25:00 AM
Lab ID: 1605875-007
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.082	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.091	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Butyl benzyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Carbazole	ND	0.075	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Chloronaphthalene	ND	0.088	0.28		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Chlorophenol	ND	0.088	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Chrysene	ND	0.095	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Di-n-butyl phthalate	ND	0.083	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Di-n-octyl phthalate	ND	0.095	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Dibenz(a,h)anthracene	ND	0.090	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,2-Dichlorobenzene	ND	0.085	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,3-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,4-Dichlorobenzene	ND	0.094	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
3,3´-Dichlorobenzidine	ND	0.082	0.28		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Diethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dichlorophenol	ND	0.10	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dimethylphenol	ND	0.12	0.33		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.067	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dinitrophenol	ND	0.074	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Fluoranthene	ND	0.064	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachlorobenzene	ND	0.088	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachlorobutadiene	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachloroethane	ND	0.096	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.087	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Methylphenol	ND	0.093	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
3+4-Methylphenol	ND	0.081	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (18-20')
Project: SWMU 10
Collection Date: 5/17/2016 10:25:00 AM
Lab ID: 1605875-007
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
3-Nitroaniline	ND	0.098	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Nitroaniline	ND	0.079	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Nitrophenol	ND	0.085	0.28		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Pentachlorophenol	ND	0.072	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Phenanthrene	ND	0.076	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Phenol	ND	0.084	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Pyrene	ND	0.084	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Pyridine	ND	0.088	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4,6-Trichlorophenol	ND	0.093	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Surr: 2-Fluorophenol	49.6	0	28.3-102		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: Phenol-d5	54.2	0	35.7-103		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: 2,4,6-Tribromophenol	61.6	0	35.2-108		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: Nitrobenzene-d5	55.6		24-118		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: 2-Fluorobiphenyl	58.2		35.4-111		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: 4-Terphenyl-d14	47.1		15-91.7		%Rec	1	5/25/2016 7:23:09 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	8.30	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Toluene	6.56	0.253	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Ethylbenzene	1.43	0.281	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.351	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,4-Trimethylbenzene	1.34	0.355	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,3,5-Trimethylbenzene	0.847	0.345	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Naphthalene	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1-Methylnaphthalene	1.39	0.238	4.18	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Methylnaphthalene	1.74	0.551	4.18	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Acetone	1.83	0.619	10.5	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Bromobenzene	ND	0.213	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Bromodichloromethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Bromoform	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (18-20')
Project: SWMU 10
Collection Date: 5/17/2016 10:25:00 AM
Lab ID: 1605875-007
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.377	3.14		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Butanone	ND	0.754	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Carbon disulfide	ND	0.774	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Carbon tetrachloride	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chlorobenzene	ND	0.240	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chloroethane	ND	0.386	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chloroform	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chloromethane	ND	0.530	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Chlorotoluene	ND	0.356	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
4-Chlorotoluene	ND	0.348	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
cis-1,2-DCE	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
cis-1,3-Dichloropropene	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.223	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Dibromochloromethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Dibromomethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dichlorobenzene	ND	0.305	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,3-Dichlorobenzene	ND	0.386	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,4-Dichlorobenzene	ND	0.392	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Dichlorodifluoromethane	ND	1.22	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1-Dichloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1-Dichloroethene	ND	0.342	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dichloropropane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,3-Dichloropropane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2,2-Dichloropropane	ND	0.264	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1-Dichloropropene	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Hexachlorobutadiene	ND	0.477	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Hexanone	ND	0.521	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Isopropylbenzene	ND	0.263	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
4-Isopropyltoluene	ND	0.392	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
4-Methyl-2-pentanone	ND	4.18	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Methylene chloride	ND	2.09	3.14		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
n-Butylbenzene	ND	0.509	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
n-Propylbenzene	0.376	0.374	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
sec-Butylbenzene	ND	0.371	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Styrene	ND	0.267	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
tert-Butylbenzene	ND	0.306	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Tetrachloroethene (PCE)	ND	0.275	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-19 (18-20')
Project: SWMU 10
Collection Date: 5/17/2016 10:25:00 AM
Lab ID: 1605875-007
Matrix: SOIL
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.211	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
trans-1,3-Dichloropropene	ND	0.253	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.506	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.634	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,1-Trichloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,2-Trichloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Trichloroethene (TCE)	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Trichlorofluoromethane	ND	0.263	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,3-Trichloropropane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Vinyl chloride	ND	0.550	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Xylenes, Total	4.35	0.834	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
Surr: Dibromofluoromethane	90.2	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
Surr: Toluene-d8	96.5	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.52	3.5		mg/Kg-dr	1	5/23/2016 7:50:34 PM	C34413
Surr: BFB	99.7	0	70-130		%Rec	1	5/23/2016 7:50:34 PM	C34413

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 1:10:00 PM
Lab ID: 1605875-008
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	8900	410	1200		mg/Kg-dr	100	5/25/2016 9:44:23 AM	25449
Motor Oil Range Organics (MRO)	6700	5800	5800		mg/Kg-dr	100	5/25/2016 9:44:23 AM	25449
Surr: DNOP	0	0	70-130	S	%Rec	100	5/25/2016 9:44:23 AM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	2.0	0.0067	0.39		mg/Kg-dr	10	5/24/2016 1:18:28 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.7	1.4	3.0	J	mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Arsenic	5.4	0.87	3.0		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Barium	490	0.11	0.23		mg/Kg-dr	2	6/1/2016 12:06:41 PM	25586
Beryllium	0.77	0.0055	0.18		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Cadmium	ND	0.076	0.12		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Chromium	150	0.15	0.36		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Cobalt	4.9	0.045	0.36		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Iron	16000	230	580		mg/Kg-dr	200	6/16/2016 8:36:27 AM	25586
Lead	21	0.21	0.30		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Manganese	520	0.11	0.24		mg/Kg-dr	2	5/24/2016 3:46:21 PM	25447
Nickel	12	0.14	0.60		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:57:07 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Vanadium	23	0.042	3.0		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Zinc	390	1.4	6.0		mg/Kg-dr	2	5/24/2016 3:46:21 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Acenaphthylene	ND	9.5	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Aniline	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Anthracene	ND	7.7	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Azobenzene	ND	14	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benz(a)anthracene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(a)pyrene	ND	8.8	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(b)fluoranthene	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(g,h,i)perylene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(k)fluoranthene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzoic acid	ND	9.7	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzyl alcohol	ND	9.1	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Bis(2-chloroethoxy)methane	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 1:10:00 PM
Lab ID: 1605875-008
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	8.6	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Bis(2-chloroisopropyl)ether	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Bis(2-ethylhexyl)phthalate	ND	9.5	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Bromophenyl phenyl ether	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Butyl benzyl phthalate	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Carbazole	ND	7.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Chloro-3-methylphenol	ND	14	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Chloroaniline	ND	13	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Chloronaphthalene	ND	9.2	29	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Chlorophenol	ND	9.2	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Chlorophenyl phenyl ether	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Chrysene	ND	9.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Di-n-butyl phthalate	ND	8.7	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Di-n-octyl phthalate	ND	10	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Dibenz(a,h)anthracene	ND	9.4	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Dibenzofuran	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,2-Dichlorobenzene	ND	8.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,3-Dichlorobenzene	ND	9.0	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,4-Dichlorobenzene	ND	9.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
3,3´-Dichlorobenzidine	ND	8.6	29	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Diethyl phthalate	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Dimethyl phthalate	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dichlorophenol	ND	11	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dimethylphenol	ND	13	35	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4,6-Dinitro-2-methylphenol	ND	7.1	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dinitrophenol	ND	7.7	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dinitrotoluene	ND	10	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,6-Dinitrotoluene	ND	12	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Fluoranthene	ND	6.7	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Fluorene	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachlorobenzene	ND	9.2	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachlorobutadiene	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachlorocyclopentadiene	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachloroethane	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Indeno(1,2,3-cd)pyrene	ND	9.1	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Isophorone	ND	13	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1-Methylnaphthalene	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Methylnaphthalene	ND	14	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Methylphenol	ND	9.8	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 1:10:00 PM
Lab ID: 1605875-008
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	8.4	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
N-Nitrosodi-n-propylamine	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
N-Nitrosodiphenylamine	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Naphthalene	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Nitroaniline	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
3-Nitroaniline	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Nitroaniline	ND	8.2	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Nitrobenzene	ND	12	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Nitrophenol	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Nitrophenol	ND	8.9	29	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Pentachlorophenol	ND	7.5	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Phenanthrene	ND	7.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Phenol	ND	8.8	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Pyrene	ND	8.8	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Pyridine	ND	9.3	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,2,4-Trichlorobenzene	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4,5-Trichlorophenol	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4,6-Trichlorophenol	ND	9.7	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Surr: 2-Fluorophenol	0	0	28.3-102	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: Phenol-d5	0	0	35.7-103	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: 2,4,6-Tribromophenol	0	0	35.2-108	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: Nitrobenzene-d5	0		24-118	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: 2-Fluorobiphenyl	0		35.4-111	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: 4-Terphenyl-d14	0		15-91.7	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.019	0.024	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Toluene	ND	0.0028	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Ethylbenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.015	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,4-Trimethylbenzene	ND	0.0035	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,3,5-Trimethylbenzene	ND	0.0035	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.012	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.0034	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Naphthalene	ND	0.0074	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1-Methylnaphthalene	ND	0.011	0.19	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Methylnaphthalene	ND	0.010	0.19	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Acetone	ND	0.062	0.71	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Bromobenzene	ND	0.0038	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Bromodichloromethane	ND	0.0028	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 1:10:00 PM
Lab ID: 1605875-008
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0058	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Bromomethane	ND	0.018	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Butanone	ND	0.027	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Carbon disulfide	ND	0.016	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Carbon tetrachloride	ND	0.0031	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chlorobenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chloroethane	ND	0.0095	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chloroform	ND	0.0036	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chloromethane	ND	0.0042	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Chlorotoluene	ND	0.0035	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
4-Chlorotoluene	ND	0.0042	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
cis-1,2-DCE	ND	0.0028	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
cis-1,3-Dichloropropene	ND	0.0044	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.015	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Dibromochloromethane	ND	0.0043	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Dibromomethane	ND	0.0041	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dichlorobenzene	ND	0.0042	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,3-Dichlorobenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,4-Dichlorobenzene	ND	0.0059	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Dichlorodifluoromethane	ND	0.015	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1-Dichloroethane	ND	0.0026	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1-Dichloroethene	ND	0.016	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dichloropropane	ND	0.0040	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,3-Dichloropropane	ND	0.0054	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2,2-Dichloropropane	ND	0.0027	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1-Dichloropropene	ND	0.0038	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Hexachlorobutadiene	ND	0.0058	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Hexanone	ND	0.026	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Isopropylbenzene	ND	0.0041	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
4-Isopropyltoluene	ND	0.0043	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
4-Methyl-2-pentanone	ND	0.014	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Methylene chloride	ND	0.014	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
n-Butylbenzene	ND	0.0042	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
n-Propylbenzene	ND	0.0037	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
sec-Butylbenzene	ND	0.0066	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Styrene	ND	0.0042	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
tert-Butylbenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.0046	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.0077	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20 (2-2.5')
Project: SWMU 10
Collection Date: 5/17/2016 1:10:00 PM
Lab ID: 1605875-008
Matrix: MEOH (SOIL)
Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
trans-1,2-DCE	ND	0.013	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
trans-1,3-Dichloropropene	ND	0.0070	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,3-Trichlorobenzene	ND	0.0071	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,4-Trichlorobenzene	ND	0.0051	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,1-Trichloroethane	ND	0.0029	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,2-Trichloroethane	ND	0.0056	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Trichloroethene (TCE)	ND	0.0051	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Trichlorofluoromethane	ND	0.0036	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,3-Trichloropropane	ND	0.0082	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Vinyl chloride	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Xylenes, Total	ND	0.0090	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Surr: Dibromofluoromethane	92.5		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
Surr: 1,2-Dichloroethane-d4	81.5		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
Surr: Toluene-d8	102		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
Surr: 4-Bromofluorobenzene	107		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	1.1	0.72	4.8	J	mg/Kg-dr	1	5/23/2016 8:18:57 PM	C34413
Surr: BFB	98.1	0	70-130		%Rec	1	5/23/2016 8:18:57 PM	C34413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:17	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	1.06	J3	0.0390	0.250	1	05/25/2016 16:34	WG874999

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:18	WG875269

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	3.88		0.0390	0.250	1	05/31/2016 10:16	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	0.960	J	0.640	2.00	1	05/26/2016 15:19	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	U		0.0390	0.250	1	05/31/2016 10:17	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:19	WG875269

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	05/31/2016 10:19	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:19	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	U		0.0390	0.250	1	05/31/2016 10:20	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:20	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	U		0.0390	0.250	1	05/31/2016 10:21	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:20	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0400	J	0.0390	0.250	1	05/27/2016 15:00	WG875172

2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 3060A/7196A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	1.16	J	0.640	2.00	1	05/26/2016 15:21	WG875269

Wet Chemistry by Method 9012B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	1.56		0.0390	0.250	1	05/27/2016 15:05	WG875172

2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3140032-1 05/26/16 15:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.640	2.00

L836517-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836517-01 05/26/16 15:08 • (DUP) R3140032-4 05/26/16 15:08

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

L837120-05 Original Sample (OS) • Duplicate (DUP)

(OS) L837120-05 05/26/16 15:28 • (DUP) R3140032-8 05/26/16 15:30

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	U	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140032-2 05/26/16 15:04 • (LCSD) R3140032-3 05/26/16 15:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	56.9	56.6	56.6	99.0	99.0	80.0-120			0.000	20

L836517-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836517-01 05/26/16 15:08 • (MS) R3140032-5 05/26/16 15:10 • (MSD) R3140032-6 05/26/16 15:10

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	ND	3.72	3.72	9.00	9.00	1	75.0-125	J6	J6	0.000	20

Method Blank (MB)

(MB) R3139749-1 05/25/16 16:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

L836254-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836254-01 05/25/16 16:13 • (DUP) R3139749-5 05/25/16 16:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Cyanide	ND	ND	1	0.000		20

L836952-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836952-01 05/25/16 16:34 • (DUP) R3139749-6 05/25/16 16:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Cyanide	1.06	1.31	1	21.0	J3	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3139749-2 05/25/16 16:07 • (LCSD) R3139749-4 05/25/16 16:14

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Cyanide	48.4	60.2	49.6	124	102	50.0-150			19.0	20

Method Blank (MB)

(MB) R3140277-1 05/27/16 14:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140277-2 05/27/16 14:53 • (LCSD) R3140277-3 05/27/16 14:55

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Cyanide	48.4	55.2	67.6	114	140	50.0-150			20.0	20

L836952-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836952-07 05/27/16 15:00 • (MS) R3140277-4 05/27/16 15:01 • (MSD) R3140277-5 05/27/16 15:02

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Cyanide	3.33	0.0400	3.53	3.32	105	98.0	1	80.0-120			6.00	20

Method Blank (MB)

(MB) R3140567-4 05/31/16 10:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

L837333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L837333-01 05/31/16 10:25 • (DUP) R3140567-7 05/31/16 10:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Cyanide	2.20	2.52	1	13.0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140567-5 05/31/16 10:12 • (LCSD) R3140567-6 05/31/16 10:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Cyanide	48.4	66.4	59.4	137	123	50.0-150			11.0	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-25449**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**25449**		RunNo:	**34433**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**		SeqNo:	**1061812**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	62.6	124			
Surr: DNOP	5.5		5.000		109	70	130			

Sample ID	**MB-25449**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**25449**		RunNo:	**34433**				
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**		SeqNo:	**1061813**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **D34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1062788** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	0.015	0.20								J
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **D34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1062788** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	0.016	0.15								J
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.48		0.5000		96.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.3	70	130			
Surr: Toluene-d8	0.49		0.5000		98.2	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		107	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **D34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1062789** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	70	130			
Toluene	1.0	0.050	1.000	0	102	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **D34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1062789** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	103	70	130			
Trichloroethene (TCE)	0.98	0.050	1.000	0	98.3	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		88.8	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		111	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**
07-Jul-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS-25468**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063539** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.2	2.00	10.00	0	102	70	130			
Toluene	11.1	2.00	10.00	0	111	70	130			
Chlorobenzene	11.1	2.00	10.00	0	111	70	130			
1,1-Dichloroethene	10.3	2.00	10.00	0	103	68	129			
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.00		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.76		10.00		87.6	70	130			
Surr: Toluene-d8	9.90		10.00		99.0	70	130			

Sample ID **LCSD-25468**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063540** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.3	2.00	10.00	0	103	70	130	1.08	0	
Toluene	11.2	2.00	10.00	0	112	70	130	0.629	0	
Chlorobenzene	11.3	2.00	10.00	0	113	70	130	1.96	0	
1,1-Dichloroethene	10.4	2.00	10.00	0	104	68	129	1.16	0	
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130	0.295	0	
Surr: 1,2-Dichloroethane-d4	8.93		10.00		89.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.1		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	8.72		10.00		87.2	70	130	0	0	
Surr: Toluene-d8	9.86		10.00		98.6	70	130	0	0	

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.00								
Toluene	ND	2.00								
Ethylbenzene	ND	2.00								
Methyl tert-butyl ether (MTBE)	ND	2.00								
1,2,4-Trimethylbenzene	ND	2.00								
1,3,5-Trimethylbenzene	ND	2.00								
1,2-Dichloroethane (EDC)	ND	2.00								
1,2-Dibromoethane (EDB)	ND	2.00								
Naphthalene	ND	2.00								
1-Methylnaphthalene	ND	4.00								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**
07-Jul-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.00								
Acetone	ND	10.0								
Bromobenzene	ND	2.00								
Bromodichloromethane	ND	2.00								
Bromoform	ND	2.00								
Bromomethane	ND	3.00								
2-Butanone	ND	10.0								
Carbon disulfide	ND	10.0								
Carbon tetrachloride	ND	2.00								
Chlorobenzene	ND	2.00								
Chloroethane	ND	2.00								
Chloroform	ND	2.00								
Chloromethane	ND	2.00								
2-Chlorotoluene	ND	2.00								
4-Chlorotoluene	ND	2.00								
cis-1,2-DCE	ND	2.00								
cis-1,3-Dichloropropene	ND	2.00								
1,2-Dibromo-3-chloropropane	ND	2.00								
Dibromochloromethane	ND	2.00								
Dibromomethane	ND	2.00								
1,2-Dichlorobenzene	ND	2.00								
1,3-Dichlorobenzene	ND	2.00								
1,4-Dichlorobenzene	ND	2.00								
Dichlorodifluoromethane	ND	2.00								
1,1-Dichloroethane	ND	2.00								
1,1-Dichloroethene	ND	2.00								
1,2-Dichloropropane	ND	2.00								
1,3-Dichloropropane	ND	2.00								
2,2-Dichloropropane	ND	2.00								
1,1-Dichloropropene	ND	2.00								
Hexachlorobutadiene	ND	2.00								
2-Hexanone	ND	10.0								
Isopropylbenzene	ND	2.00								
4-Isopropyltoluene	ND	2.00								
4-Methyl-2-pentanone	ND	10.0								
Methylene chloride	ND	3.00								
n-Butylbenzene	ND	2.00								
n-Propylbenzene	ND	2.00								
sec-Butylbenzene	ND	2.00								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**
07-Jul-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	2.00								
tert-Butylbenzene	ND	2.00								
1,1,1,2-Tetrachloroethane	ND	2.00								
1,1,2,2-Tetrachloroethane	ND	2.00								
Tetrachloroethene (PCE)	ND	2.00								
trans-1,2-DCE	ND	2.00								
trans-1,3-Dichloropropene	ND	2.00								
1,2,3-Trichlorobenzene	ND	2.00								
1,2,4-Trichlorobenzene	ND	2.00								
1,1,1-Trichloroethane	ND	2.00								
1,1,2-Trichloroethane	ND	2.00								
Trichloroethene (TCE)	ND	2.00								
Trichlorofluoromethane	ND	2.00								
1,2,3-Trichloropropane	ND	2.00								
Vinyl chloride	ND	2.00								
Xylenes, Total	ND	2.00								
Surr: 1,2-Dichloroethane-d4	8.94		10.00		89.4	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.80		10.00		88.0	70	130			
Surr: Toluene-d8	9.82		10.00		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25469**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.15	0.50								J
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	0.12	0.40								J
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	0.087	0.40								J
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25469**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.0		3.330		60.1	28.3	102			
Surr: Phenol-d5	2.2		3.330		65.9	35.7	103			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.8	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		68.4	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		73.2	35.4	111			
Surr: 4-Terphenyl-d14	1.1		1.670		64.4	15	91.7			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-25469**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063512** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	70.0	45.8	99.8			
4-Chloro-3-methylphenol	2.2	0.50	3.330	0	66.5	51.5	103			
2-Chlorophenol	1.8	0.20	3.330	0	54.1	46.5	105			
1,4-Dichlorobenzene	0.86	0.20	1.670	0	51.3	45.5	103			
2,4-Dinitrotoluene	1.1	0.50	1.670	0	66.9	36	87.2			
N-Nitrosodi-n-propylamine	0.80	0.20	1.670	0	48.1	47.3	104			
4-Nitrophenol	2.2	0.25	3.330	0	65.7	47.3	95.3			
Pentachlorophenol	1.9	0.40	3.330	0	56.6	38.7	89.3			
Phenol	1.8	0.20	3.330	0	54.5	47.8	106			
Pyrene	1.2	0.20	1.670	0	72.6	33.4	105			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	61.4	50.4	115			
Surr: 2-Fluorophenol	1.6		3.330		47.4	28.3	102			
Surr: Phenol-d5	1.9		3.330		56.0	35.7	103			
Surr: 2,4,6-Tribromophenol	2.2		3.330		66.3	35.2	108			
Surr: Nitrobenzene-d5	1.0		1.670		59.7	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		70.2	35.4	111			
Surr: 4-Terphenyl-d14	0.74		1.670		44.5	15	91.7			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25448**	SampType: **MBLK**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID: **25448**		RunNo: **34452**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1062465**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00083	0.033								J

Sample ID	**LCS-25448**	SampType: **LCS**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID: **25448**		RunNo: **34452**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1062466**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	110	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25447**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**25447**	RunNo:	**34439**					
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1061954**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Manganese	0.047	0.10								J
Nickel	ND	0.50								
Selenium	1.3	2.5								J
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	**LCS-25447**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID:	**25447**	RunNo:	**34439**					
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1061955**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	90.0	80	120			
Arsenic	24	2.5	25.00	0	95.3	80	120			
Beryllium	24	0.15	25.00	0	97.0	80	120			
Cadmium	24	0.10	25.00	0	94.4	80	120			
Chromium	23	0.30	25.00	0	93.1	80	120			
Cobalt	23	0.30	25.00	0	90.9	80	120			
Lead	23	0.25	25.00	0	91.3	80	120			
Manganese	24	0.10	25.00	0	94.1	80	120			
Nickel	23	0.50	25.00	0	92.2	80	120			
Selenium	24	2.5	25.00	0	97.6	80	120			
Silver	4.7	0.25	5.000	0	93.8	80	120			
Vanadium	24	2.5	25.00	0	95.9	80	120			
Zinc	24	2.5	25.00	0	94.2	80	120			

Sample ID	**MB-25586**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**25586**	RunNo:	**34597**					
Prep Date:	**5/31/2016**	Analysis Date:	**6/1/2016**	SeqNo:	**1067058**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-25586**	SampType: **LCS**		TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID: **25586**		RunNo: **34597**					
Prep Date:	**5/31/2016**	Analysis Date: **6/1/2016**		SeqNo: **1067059**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	22	0.10	25.00	0	88.8	80	120			

Sample ID	**MB-25586**	SampType: **MBLK**		TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID: **25586**		RunNo: **34951**					
Prep Date:	**5/31/2016**	Analysis Date: **6/16/2016**		SeqNo: **1079711**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	2.0	2.5								J

Sample ID	**LCS-25586**	SampType: **LCS**		TestCode: **EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID: **25586**		RunNo: **34951**					
Prep Date:	**5/31/2016**	Analysis Date: **6/16/2016**		SeqNo: **1079712**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	25	2.5	25.00	0	99.4	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605875**

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **C34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		100	70	130			

Sample ID **2.5ug gro icv**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **C34413**	RunNo: **34413**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	62.9	123			
Surr: BFB	510		500.0		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1605375 RcptNo: 1

Received by/date: SA 05/18/16

Logged By: Lindsay Mangin 5/18/2016 4:00:00 PM

Completed By: Lindsay Mangin 5/19/2016 7:00:19 AM

Reviewed By: 05/19/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? _____
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☒ NELAP ☐ Other
EDD (Type): EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605875	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED LIST)			Air Bubbles (Y or N)
5.17.16	1325	SOIL	SWMU 10-20(8-10')	JARS-3	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1610		SWMU 10-20(10-12')	JARS-3	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1625		SWMU 10-20(16-18')	JARS-3	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	1635		SWMU 10-20(20-22')	JARS-3	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MeOH	-004										✓					
				VIALS-2	SOBI	-004										✓					

Date: 5.18.16 Time: 0720 Relinquished by: [signature]
Received by: [signature] Date: 5/18/16 Time: 800

Date: 5/18/16 Time: 1400 Relinquished by: [signature]
Received by: [signature] Date: 05/18/16 Time: 1600

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
Email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605875	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED LIST)			Air Bubbles (Y or N)
17-16	0915	SOIL	SWMU 10-19 (2-2.5)	JARS-3	NEAT	-005			✓							✓	✓	✓			
				VIALS-2	MEOH	-005										✓					
				VIALS-2	SOBI	-005										✓					
	1015		SWMU 10-19 (12-14')	JARS-3	NEAT	-006			✓							✓	✓	✓			
				VIALS-2	MEOH	-006										✓					
				VIALS-2	SOBI	-006										✓					
	1025		SWMU 10-19 (18-20')	JARS-3	NEAT	-007			✓							✓	✓	✓			
				VIALS-2	MEOH	-007										✓					
				VIALS-2	SOBI	-007										✓					
	1310		SWMU 10-20 (2-2.5')	JARS-3	NEAT	-008			✓							✓	✓	✓			
				VIALS-2	MEOH	-008										✓					
				VIALS-2	SOBI	-008										✓					

Date: 5/18/16 Time: 0720 Relinquished by: [signature]
Received by: [signature] Date Time: 5/18/16 800

Date: 5/18/16 Time: 1400 Relinquished by: [signature]
Received by: [signature] Date Time: 05/18/16 1600

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 28, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1605943

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/19/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 9:05:00 AM
Lab ID: 1605943-001 **Matrix:** SOIL **Received Date:** 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	32	3.7	10		mg/Kg-dr	1	5/24/2016 2:54:59 PM	25449
Motor Oil Range Organics (MRO)	ND	52	52		mg/Kg-dr	1	5/24/2016 2:54:59 PM	25449
Surr: DNOP	110	0	70-130		%Rec	1	5/24/2016 2:54:59 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	7.7	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.056	0.00062	0.036		mg/Kg-dr	1	5/26/2016 3:40:58 PM	25509
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.3	2.7		mg/Kg-dr	1	5/31/2016 9:51:45 AM	25508
Arsenic	3.3	0.79	2.7		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Barium	570	0.26	0.54		mg/Kg-dr	5	5/31/2016 10:06:38 AM	25508
Beryllium	0.72	0.0050	0.16		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Cadmium	ND	0.069	0.11		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Chromium	9.2	0.14	0.33		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Cobalt	3.7	0.041	0.33		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Iron	9900	110	270		mg/Kg-dr	100	5/31/2016 10:08:25 AM	25508
Lead	2.1	0.19	0.27		mg/Kg-dr	1	5/31/2016 9:51:45 AM	25508
Manganese	440	0.24	0.54		mg/Kg-dr	5	5/31/2016 10:06:38 AM	25508
Nickel	6.0	0.12	0.54		mg/Kg-dr	1	5/31/2016 9:51:45 AM	25508
Selenium	ND	1.2	2.7		mg/Kg-dr	1	5/31/2016 9:51:45 AM	25508
Silver	ND	0.034	0.27		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Vanadium	16	0.038	2.7		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
Zinc	16	0.62	2.7		mg/Kg-dr	1	5/26/2016 4:04:00 PM	25508
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.092	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Acenaphthylene	ND	0.087	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Aniline	ND	0.10	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Anthracene	ND	0.071	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Azobenzene	ND	0.13	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benz(a)anthracene	ND	0.092	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benzo(a)pyrene	ND	0.081	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benzo(b)fluoranthene	ND	0.097	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benzo(g,h,i)perylene	ND	0.095	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benzo(k)fluoranthene	ND	0.095	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benzoic acid	ND	0.089	0.54		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Benzyl alcohol	ND	0.084	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 9:05:00 AM
Lab ID: 1605943-001
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.079	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.096	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Bis(2-ethylhexyl)phthalate	0.17	0.088	0.54	J	mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4-Bromophenyl phenyl ether	ND	0.10	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Butyl benzyl phthalate	ND	0.095	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Carbazole	ND	0.073	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4-Chloro-3-methylphenol	ND	0.13	0.54		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4-Chloroaniline	ND	0.12	0.54		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2-Chloronaphthalene	ND	0.085	0.27		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2-Chlorophenol	ND	0.085	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4-Chlorophenyl phenyl ether	ND	0.12	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Chrysene	ND	0.091	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Di-n-butyl phthalate	ND	0.080	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Di-n-octyl phthalate	ND	0.092	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Dibenz(a,h)anthracene	ND	0.087	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Dibenzofuran	ND	0.11	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
1,2-Dichlorobenzene	ND	0.082	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
1,3-Dichlorobenzene	ND	0.083	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
1,4-Dichlorobenzene	ND	0.091	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
3,3´-Dichlorobenzidine	ND	0.079	0.27		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Diethyl phthalate	ND	0.11	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Dimethyl phthalate	ND	0.11	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,4-Dichlorophenol	ND	0.10	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,4-Dimethylphenol	ND	0.12	0.32		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.065	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,4-Dinitrophenol	ND	0.071	0.54		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,4-Dinitrotoluene	ND	0.096	0.54		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,6-Dinitrotoluene	ND	0.11	0.54		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Fluoranthene	ND	0.062	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Fluorene	ND	0.098	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Hexachlorobenzene	ND	0.085	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Hexachlorobutadiene	ND	0.12	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Hexachlorocyclopentadiene	ND	0.12	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Hexachloroethane	ND	0.092	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.084	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
1-Methylnaphthalene	ND	0.11	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2-Methylnaphthalene	ND	0.13	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2-Methylphenol	ND	0.090	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
3+4-Methylphenol	ND	0.078	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 9:05:00 AM
Lab ID: 1605943-001
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.10	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
N-Nitrosodiphenylamine	ND	0.10	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Naphthalene	ND	0.10	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2-Nitroaniline	ND	0.12	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
3-Nitroaniline	ND	0.095	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4-Nitroaniline	ND	0.076	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Nitrobenzene	ND	0.11	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2-Nitrophenol	ND	0.11	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
4-Nitrophenol	ND	0.082	0.27		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Pentachlorophenol	ND	0.069	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Phenanthrene	ND	0.073	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Phenol	ND	0.081	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Pyrene	ND	0.081	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Pyridine	ND	0.085	0.43		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
2,4,6-Trichlorophenol	ND	0.089	0.21		mg/Kg-dr	1	5/26/2016 6:23:14 PM	25469
Surr: 2-Fluorophenol	61.9	0	28.3-102		%Rec	1	5/26/2016 6:23:14 PM	25469
Surr: Phenol-d5	65.9	0	35.7-103		%Rec	1	5/26/2016 6:23:14 PM	25469
Surr: 2,4,6-Tribromophenol	83.3	0	35.2-108		%Rec	1	5/26/2016 6:23:14 PM	25469
Surr: Nitrobenzene-d5	65.7		24-118		%Rec	1	5/26/2016 6:23:14 PM	25469
Surr: 2-Fluorobiphenyl	80.8		35.4-111		%Rec	1	5/26/2016 6:23:14 PM	25469
Surr: 4-Terphenyl-d14	67.2		15-91.7		%Rec	1	5/26/2016 6:23:14 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Toluene	4.77	0.271	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Ethylbenzene	1.22	0.301	2.24	J	µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.377	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2,4-Trimethylbenzene	1.95	0.380	2.24	J	µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,3,5-Trimethylbenzene	0.774	0.370	2.24	J	µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Naphthalene	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1-Methylnaphthalene	0.370	0.255	4.49	J	µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
2-Methylnaphthalene	ND	0.590	4.49		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Acetone	13.9	0.664	11.2		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Bromobenzene	ND	0.228	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Bromodichloromethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Bromoform	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 9:05:00 AM
Lab ID: 1605943-001
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.404	3.36		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
2-Butanone	ND	0.809	11.2		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Carbon disulfide	ND	0.830	11.2		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Carbon tetrachloride	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Chlorobenzene	ND	0.257	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Chloroethane	ND	0.414	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Chloroform	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Chloromethane	ND	0.568	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
2-Chlorotoluene	ND	0.382	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
4-Chlorotoluene	ND	0.373	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
cis-1,2-DCE	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
cis-1,3-Dichloropropene	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.239	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Dibromochloromethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Dibromomethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2-Dichlorobenzene	ND	0.327	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,3-Dichlorobenzene	ND	0.414	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,4-Dichlorobenzene	ND	0.420	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Dichlorodifluoromethane	ND	1.31	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1-Dichloroethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1-Dichloroethene	ND	0.367	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2-Dichloropropane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,3-Dichloropropane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
2,2-Dichloropropane	ND	0.283	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1-Dichloropropene	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Hexachlorobutadiene	ND	0.511	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
2-Hexanone	ND	0.559	11.2		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Isopropylbenzene	ND	0.282	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
4-Isopropyltoluene	ND	0.421	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
4-Methyl-2-pentanone	ND	4.49	11.2		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Methylene chloride	ND	2.24	3.36		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
n-Butylbenzene	ND	0.546	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
n-Propylbenzene	ND	0.402	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
sec-Butylbenzene	ND	0.398	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Styrene	ND	0.287	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
tert-Butylbenzene	ND	0.328	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Tetrachloroethene (PCE)	ND	0.295	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 9:05:00 AM
Lab ID: 1605943-001
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.227	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
trans-1,3-Dichloropropene	ND	0.272	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.543	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.680	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1,1-Trichloroethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,1,2-Trichloroethane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Trichloroethene (TCE)	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Trichlorofluoromethane	ND	0.282	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
1,2,3-Trichloropropane	ND	2.24	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Vinyl chloride	ND	0.590	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Xylenes, Total	4.46	0.894	2.24		µg/Kg-dry	1	5/25/2016 4:59:00 PM	25468
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	5/25/2016 4:59:00 PM	25468
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	5/25/2016 4:59:00 PM	25468
Surr: Dibromofluoromethane	93.0	0	70-130		%Rec	1	5/25/2016 4:59:00 PM	25468
Surr: Toluene-d8	97.5	0	70-130		%Rec	1	5/25/2016 4:59:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	2.0	0.61	4.1	J	mg/Kg-dr	1	5/24/2016 12:36:41 PM	A34454
Surr: BFB	99.7	0	70-130		%Rec	1	5/24/2016 12:36:41 PM	A34454

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (12-14')
Project: SWMU 10
Collection Date: 5/18/2016 10:15:00 AM
Lab ID: 1605943-002 **Matrix:** SOIL **Received Date:** 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.5	12		mg/Kg-dr	1	5/24/2016 12:43:18 PM	25449
Motor Oil Range Organics (MRO)	ND	62	62		mg/Kg-dr	1	5/24/2016 12:43:18 PM	25449
Surr: DNOP	104	0	70-130		%Rec	1	5/24/2016 12:43:18 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	19	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0043	0.00069	0.040	J	mg/Kg-dr	1	5/26/2016 3:46:15 PM	25509
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	7.3	15		mg/Kg-dr	5	6/15/2016 6:59:11 AM	25508
Arsenic	1.8	0.90	3.1	J	mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Barium	220	0.060	0.12		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Beryllium	1.3	0.0057	0.19		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Cadmium	ND	0.078	0.12		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Chromium	11	0.15	0.37		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Cobalt	5.6	0.047	0.37		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Iron	20000	120	310		mg/Kg-dr	100	5/31/2016 10:09:54 AM	25508
Lead	5.1	0.22	0.31		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Manganese	240	0.055	0.12		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Nickel	11	0.14	0.62		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Selenium	ND	1.3	3.1		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Silver	ND	0.039	0.31		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Vanadium	21	0.043	3.1		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
Zinc	20	0.70	3.1		mg/Kg-dr	1	5/26/2016 4:08:33 PM	25508
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Acenaphthylene	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Aniline	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Anthracene	ND	0.082	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Azobenzene	ND	0.15	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benz(a)anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benzo(a)pyrene	ND	0.093	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benzoic acid	ND	0.10	0.62		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Benzyl alcohol	ND	0.097	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (12-14')
Project: SWMU 10
Collection Date: 5/18/2016 10:15:00 AM
Lab ID: 1605943-002
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.091	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Bis(2-ethylhexyl)phthalate	0.14	0.10	0.62	J	mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Butyl benzyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Carbazole	ND	0.083	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4-Chloro-3-methylphenol	ND	0.15	0.62		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4-Chloroaniline	ND	0.13	0.62		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2-Chloronaphthalene	ND	0.097	0.31		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2-Chlorophenol	ND	0.097	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Chrysene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Di-n-butyl phthalate	0.11	0.092	0.49	J	mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Di-n-octyl phthalate	ND	0.11	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Dibenz(a,h)anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Dibenzofuran	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
1,2-Dichlorobenzene	ND	0.094	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
1,3-Dichlorobenzene	ND	0.095	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
3,3´-Dichlorobenzidine	ND	0.091	0.31		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Diethyl phthalate	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,4-Dimethylphenol	ND	0.13	0.37		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.075	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,4-Dinitrophenol	ND	0.082	0.62		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.62		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Fluoranthene	ND	0.071	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Fluorene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Hexachlorobenzene	ND	0.097	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Hexachlorobutadiene	ND	0.14	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.096	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
1-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2-Methylnaphthalene	ND	0.15	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2-Methylphenol	ND	0.10	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
3+4-Methylphenol	ND	0.089	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (12-14')
Project: SWMU 10
Collection Date: 5/18/2016 10:15:00 AM
Lab ID: 1605943-002
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2-Nitroaniline	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
3-Nitroaniline	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4-Nitroaniline	ND	0.087	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2-Nitrophenol	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
4-Nitrophenol	ND	0.094	0.31		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Pentachlorophenol	ND	0.079	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Phenanthrene	ND	0.084	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Phenol	ND	0.093	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Pyrene	ND	0.093	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Pyridine	ND	0.098	0.49		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 6:53:34 PM	25469
Surr: 2-Fluorophenol	48.1	0	28.3-102		%Rec	1	5/26/2016 6:53:34 PM	25469
Surr: Phenol-d5	55.6	0	35.7-103		%Rec	1	5/26/2016 6:53:34 PM	25469
Surr: 2,4,6-Tribromophenol	57.9	0	35.2-108		%Rec	1	5/26/2016 6:53:34 PM	25469
Surr: Nitrobenzene-d5	57.3		24-118		%Rec	1	5/26/2016 6:53:34 PM	25469
Surr: 2-Fluorobiphenyl	57.6		35.4-111		%Rec	1	5/26/2016 6:53:34 PM	25469
Surr: 4-Terphenyl-d14	56.0		15-91.7		%Rec	1	5/26/2016 6:53:34 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	1.93	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Toluene	1.47	0.226	1.87	J	µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Ethylbenzene	ND	0.252	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.315	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2,4-Trimethylbenzene	0.347	0.318	1.87	J	µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.309	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2-Dichloroethane (EDC)	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2-Dibromoethane (EDB)	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Naphthalene	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1-Methylnaphthalene	ND	0.213	3.75		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
2-Methylnaphthalene	ND	0.493	3.75		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Acetone	5.84	0.554	9.37	J	µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Bromobenzene	ND	0.191	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Bromodichloromethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Bromoform	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468

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Project: SWMU 10
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Lab ID: 1605943-002
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.337	2.81		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
2-Butanone	ND	0.675	9.37		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Carbon disulfide	ND	0.693	9.37		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Carbon tetrachloride	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Chlorobenzene	ND	0.215	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Chloroethane	ND	0.346	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Chloroform	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Chloromethane	ND	0.475	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
2-Chlorotoluene	ND	0.319	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
4-Chlorotoluene	ND	0.311	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
cis-1,2-DCE	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
cis-1,3-Dichloropropene	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.199	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Dibromochloromethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Dibromomethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2-Dichlorobenzene	ND	0.273	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,3-Dichlorobenzene	ND	0.346	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,4-Dichlorobenzene	ND	0.351	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Dichlorodifluoromethane	ND	1.09	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1-Dichloroethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1-Dichloroethene	ND	0.307	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2-Dichloropropane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,3-Dichloropropane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
2,2-Dichloropropane	ND	0.237	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1-Dichloropropene	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Hexachlorobutadiene	ND	0.427	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
2-Hexanone	ND	0.467	9.37		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Isopropylbenzene	ND	0.236	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
4-Isopropyltoluene	ND	0.351	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
4-Methyl-2-pentanone	ND	3.75	9.37		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Methylene chloride	ND	1.87	2.81		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
n-Butylbenzene	ND	0.456	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
n-Propylbenzene	ND	0.335	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
sec-Butylbenzene	ND	0.333	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Styrene	ND	0.239	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
tert-Butylbenzene	ND	0.274	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Tetrachloroethene (PCE)	ND	0.246	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468

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Project: SWMU 10
Collection Date: 5/18/2016 10:15:00 AM
Lab ID: 1605943-002
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.189	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
trans-1,3-Dichloropropene	ND	0.227	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.453	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.568	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1,1-Trichloroethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,1,2-Trichloroethane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Trichloroethene (TCE)	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Trichlorofluoromethane	ND	0.235	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
1,2,3-Trichloropropane	ND	1.87	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Vinyl chloride	ND	0.493	1.87		µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Xylenes, Total	0.937	0.747	1.87	J	µg/Kg-dry	1	5/25/2016 5:24:00 PM	25468
Surr: 1,2-Dichloroethane-d4	99.7	0	70-130		%Rec	1	5/25/2016 5:24:00 PM	25468
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	5/25/2016 5:24:00 PM	25468
Surr: Dibromofluoromethane	91.9	0	70-130		%Rec	1	5/25/2016 5:24:00 PM	25468
Surr: Toluene-d8	97.2	0	70-130		%Rec	1	5/25/2016 5:24:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.60	0.48	3.2	J	mg/Kg-dr	1	5/24/2016 1:05:04 PM	A34454
Surr: BFB	93.4	0	70-130		%Rec	1	5/24/2016 1:05:04 PM	A34454

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (20-22')
Project: SWMU 10
Collection Date: 5/18/2016 10:25:00 AM
Lab ID: 1605943-003 **Matrix:** SOIL **Received Date:** 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	3.8	11		mg/Kg-dr	1	5/24/2016 1:06:24 PM	25449
Motor Oil Range Organics (MRO)	ND	53	53		mg/Kg-dr	1	5/24/2016 1:06:24 PM	25449
Surr: DNOP	120	0	70-130		%Rec	1	5/24/2016 1:06:24 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	ND	0.00063	0.037		mg/Kg-dr	1	5/26/2016 3:48:01 PM	25509
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	6.8	14		mg/Kg-dr	5	5/31/2016 10:12:55 AM	25508
Arsenic	3.3	0.83	2.9		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Barium	1000	0.28	0.57		mg/Kg-dr	5	5/31/2016 10:12:55 AM	25508
Beryllium	0.91	0.0053	0.17		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Cadmium	ND	0.072	0.11		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Chromium	12	0.14	0.34		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Cobalt	8.8	0.043	0.34		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Iron	18000	110	290		mg/Kg-dr	100	5/31/2016 10:11:24 AM	25508
Lead	2.6	0.20	0.29		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Manganese	1800	0.51	1.1		mg/Kg-dr	10	5/31/2016 11:01:26 AM	25508
Nickel	15	0.13	0.57		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Selenium	ND	1.2	2.9		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Silver	ND	0.036	0.29		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Vanadium	17	0.040	2.9		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
Zinc	27	0.65	2.9		mg/Kg-dr	1	5/26/2016 4:10:03 PM	25508
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.096	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Acenaphthylene	ND	0.091	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Aniline	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Anthracene	ND	0.074	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benz(a)anthracene	ND	0.096	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benzo(a)pyrene	ND	0.085	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benzo(g,h,i)perylene	ND	0.099	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benzo(k)fluoranthene	ND	0.099	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benzoic acid	ND	0.093	0.56		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Benzyl alcohol	ND	0.088	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469

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Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.082	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Bis(2-ethylhexyl)phthalate	0.12	0.091	0.56	J	mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Butyl benzyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Carbazole	ND	0.076	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2-Chloronaphthalene	ND	0.088	0.28		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2-Chlorophenol	ND	0.088	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Chrysene	ND	0.095	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Di-n-butyl phthalate	ND	0.084	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Di-n-octyl phthalate	ND	0.096	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Dibenz(a,h)anthracene	ND	0.091	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
1,2-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
1,3-Dichlorobenzene	ND	0.087	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
1,4-Dichlorobenzene	ND	0.095	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
3,3´-Dichlorobenzidine	ND	0.083	0.28		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Diethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,4-Dichlorophenol	ND	0.10	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.068	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,4-Dinitrophenol	ND	0.074	0.56		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Fluoranthene	ND	0.065	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Hexachlorobenzene	ND	0.088	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Hexachlorobutadiene	ND	0.13	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Hexachloroethane	ND	0.096	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.087	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2-Methylphenol	ND	0.094	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
3+4-Methylphenol	ND	0.081	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469

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Lab ID: 1605943-003
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
3-Nitroaniline	ND	0.099	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4-Nitroaniline	ND	0.079	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
4-Nitrophenol	ND	0.085	0.28		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Pentachlorophenol	ND	0.072	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Phenanthrene	ND	0.076	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Phenol	ND	0.084	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Pyrene	ND	0.085	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Pyridine	ND	0.089	0.45		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
2,4,6-Trichlorophenol	ND	0.093	0.22		mg/Kg-dr	1	5/26/2016 7:23:47 PM	25469
Surr: 2-Fluorophenol	50.2	0	28.3-102		%Rec	1	5/26/2016 7:23:47 PM	25469
Surr: Phenol-d5	54.9	0	35.7-103		%Rec	1	5/26/2016 7:23:47 PM	25469
Surr: 2,4,6-Tribromophenol	67.1	0	35.2-108		%Rec	1	5/26/2016 7:23:47 PM	25469
Surr: Nitrobenzene-d5	52.9		24-118		%Rec	1	5/26/2016 7:23:47 PM	25469
Surr: 2-Fluorobiphenyl	64.6		35.4-111		%Rec	1	5/26/2016 7:23:47 PM	25469
Surr: 4-Terphenyl-d14	51.3		15-91.7		%Rec	1	5/26/2016 7:23:47 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	8.48	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Toluene	6.22	0.212	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Ethylbenzene	1.32	0.236	1.75	J	µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.295	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2,4-Trimethylbenzene	1.03	0.297	1.75	J	µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,3,5-Trimethylbenzene	0.684	0.289	1.75	J	µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2-Dichloroethane (EDC)	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2-Dibromoethane (EDB)	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Naphthalene	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1-Methylnaphthalene	0.219	0.199	3.51	J	µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
2-Methylnaphthalene	ND	0.462	3.51		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Acetone	6.34	0.519	8.77	J	µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Bromobenzene	ND	0.178	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Bromodichloromethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Bromoform	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468

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Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.316	2.63		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
2-Butanone	ND	0.632	8.77		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Carbon disulfide	ND	0.649	8.77		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Carbon tetrachloride	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Chlorobenzene	ND	0.201	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Chloroethane	ND	0.324	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Chloroform	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Chloromethane	ND	0.444	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
2-Chlorotoluene	ND	0.298	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
4-Chlorotoluene	ND	0.292	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
cis-1,2-DCE	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
cis-1,3-Dichloropropene	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.187	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Dibromochloromethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Dibromomethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2-Dichlorobenzene	ND	0.255	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,3-Dichlorobenzene	ND	0.324	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,4-Dichlorobenzene	ND	0.328	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Dichlorodifluoromethane	ND	1.02	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1-Dichloroethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1-Dichloroethene	ND	0.287	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2-Dichloropropane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,3-Dichloropropane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
2,2-Dichloropropane	ND	0.221	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1-Dichloropropene	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Hexachlorobutadiene	ND	0.400	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
2-Hexanone	ND	0.437	8.77		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Isopropylbenzene	ND	0.221	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
4-Isopropyltoluene	ND	0.329	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
4-Methyl-2-pentanone	ND	3.51	8.77		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Methylene chloride	ND	1.75	2.63		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
n-Butylbenzene	ND	0.427	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
n-Propylbenzene	ND	0.314	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
sec-Butylbenzene	ND	0.311	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Styrene	ND	0.224	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
tert-Butylbenzene	ND	0.256	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Tetrachloroethene (PCE)	ND	0.230	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21 (20-22')
Project: SWMU 10
Collection Date: 5/18/2016 10:25:00 AM
Lab ID: 1605943-003
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.177	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
trans-1,3-Dichloropropene	ND	0.212	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.424	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.532	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1,1-Trichloroethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,1,2-Trichloroethane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Trichloroethene (TCE)	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Trichlorofluoromethane	ND	0.220	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
1,2,3-Trichloropropane	ND	1.75	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Vinyl chloride	ND	0.461	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Xylenes, Total	3.85	0.699	1.75		µg/Kg-dry	1	5/25/2016 5:49:00 PM	25468
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	5/25/2016 5:49:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 5:49:00 PM	25468
Surr: Dibromofluoromethane	92.3	0	70-130		%Rec	1	5/25/2016 5:49:00 PM	25468
Surr: Toluene-d8	96.1	0	70-130		%Rec	1	5/25/2016 5:49:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.76	0.54	3.6	J	mg/Kg-dr	1	5/24/2016 1:33:30 PM	A34454
Surr: BFB	101	0	70-130		%Rec	1	5/24/2016 1:33:30 PM	A34454

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 4:35:00 PM
Lab ID: 1605943-004 **Matrix:** SOIL **Received Date:** 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.5	12		mg/Kg-dr	1	5/24/2016 1:28:09 PM	25449
Motor Oil Range Organics (MRO)	ND	62	62		mg/Kg-dr	1	5/24/2016 1:28:09 PM	25449
Surr: DNOP	109	0	70-130		%Rec	1	5/24/2016 1:28:09 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	19	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.044	0.00071	0.041		mg/Kg-dr	1	5/26/2016 3:49:49 PM	25509
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	7.3	15		mg/Kg-dr	5	5/31/2016 10:16:13 AM	25508
Arsenic	2.4	0.90	3.1	J	mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Barium	290	0.060	0.12		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Beryllium	0.89	0.0057	0.18		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Cadmium	ND	0.078	0.12		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Chromium	12	0.15	0.37		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Cobalt	4.9	0.047	0.37		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Iron	14000	60	150		mg/Kg-dr	50	5/31/2016 10:14:41 AM	25508
Lead	4.3	0.22	0.31		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Manganese	570	0.27	0.62		mg/Kg-dr	5	5/31/2016 10:16:13 AM	25508
Nickel	8.6	0.14	0.62		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Selenium	ND	1.3	3.1		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Silver	ND	0.039	0.31		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Vanadium	18	0.043	3.1		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
Zinc	20	0.70	3.1		mg/Kg-dr	1	5/26/2016 4:11:42 PM	25508
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Acenaphthylene	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Aniline	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Anthracene	ND	0.081	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Azobenzene	ND	0.15	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benz(a)anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benzo(a)pyrene	ND	0.093	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benzoic acid	ND	0.10	0.61		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Benzyl alcohol	ND	0.096	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 4:35:00 PM
Lab ID: 1605943-004
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.090	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Bis(2-ethylhexyl)phthalate	0.19	0.10	0.61	J	mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Butyl benzyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Carbazole	ND	0.083	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4-Chloro-3-methylphenol	ND	0.15	0.61		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4-Chloroaniline	ND	0.13	0.61		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2-Chloronaphthalene	ND	0.097	0.31		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2-Chlorophenol	ND	0.097	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Chrysene	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Di-n-butyl phthalate	0.12	0.092	0.49	J	mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Di-n-octyl phthalate	ND	0.10	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Dibenz(a,h)anthracene	ND	0.099	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Dibenzofuran	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
1,2-Dichlorobenzene	ND	0.094	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
1,3-Dichlorobenzene	ND	0.095	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
3,3´-Dichlorobenzidine	ND	0.090	0.31		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Diethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,4-Dichlorophenol	ND	0.11	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,4-Dimethylphenol	ND	0.13	0.37		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.074	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,4-Dinitrophenol	ND	0.081	0.61		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.61		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.61		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Fluoranthene	ND	0.071	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Fluorene	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Hexachlorobenzene	ND	0.097	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Hexachlorobutadiene	ND	0.14	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.096	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
1-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2-Methylnaphthalene	ND	0.15	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2-Methylphenol	ND	0.10	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
3+4-Methylphenol	ND	0.089	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 4:35:00 PM
Lab ID: 1605943-004
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2-Nitroaniline	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
3-Nitroaniline	ND	0.11	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4-Nitroaniline	ND	0.086	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2-Nitrophenol	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
4-Nitrophenol	ND	0.093	0.31		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Pentachlorophenol	ND	0.079	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Phenanthrene	ND	0.083	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Phenol	ND	0.092	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Pyrene	ND	0.093	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Pyridine	ND	0.097	0.49		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.25		mg/Kg-dr	1	5/26/2016 7:53:55 PM	25469
Surr: 2-Fluorophenol	62.9	0	28.3-102		%Rec	1	5/26/2016 7:53:55 PM	25469
Surr: Phenol-d5	64.7	0	35.7-103		%Rec	1	5/26/2016 7:53:55 PM	25469
Surr: 2,4,6-Tribromophenol	83.2	0	35.2-108		%Rec	1	5/26/2016 7:53:55 PM	25469
Surr: Nitrobenzene-d5	66.7		24-118		%Rec	1	5/26/2016 7:53:55 PM	25469
Surr: 2-Fluorobiphenyl	70.6		35.4-111		%Rec	1	5/26/2016 7:53:55 PM	25469
Surr: 4-Terphenyl-d14	95.9		15-91.7	S	%Rec	1	5/26/2016 7:53:55 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Toluene	1.18	0.201	1.67	J	µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Ethylbenzene	ND	0.224	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.280	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2,4-Trimethylbenzene	0.300	0.283	1.67	J	µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.275	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2-Dichloroethane (EDC)	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2-Dibromoethane (EDB)	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Naphthalene	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1-Methylnaphthalene	ND	0.189	3.33		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
2-Methylnaphthalene	ND	0.439	3.33		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Acetone	11.7	0.493	8.34		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Bromobenzene	ND	0.170	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Bromodichloromethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Bromoform	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 4:35:00 PM
Lab ID: 1605943-004
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.300	2.50		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
2-Butanone	ND	0.601	8.34		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Carbon disulfide	ND	0.617	8.34		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Carbon tetrachloride	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Chlorobenzene	ND	0.191	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Chloroethane	ND	0.308	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Chloroform	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Chloromethane	ND	0.422	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
2-Chlorotoluene	ND	0.284	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
4-Chlorotoluene	ND	0.277	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
cis-1,2-DCE	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
cis-1,3-Dichloropropene	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.177	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Dibromochloromethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Dibromomethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2-Dichlorobenzene	ND	0.243	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,3-Dichlorobenzene	ND	0.308	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,4-Dichlorobenzene	ND	0.312	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Dichlorodifluoromethane	ND	0.973	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1-Dichloroethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1-Dichloroethene	ND	0.273	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2-Dichloropropane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,3-Dichloropropane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
2,2-Dichloropropane	ND	0.210	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1-Dichloropropene	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Hexachlorobutadiene	ND	0.380	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
2-Hexanone	ND	0.415	8.34		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Isopropylbenzene	ND	0.210	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
4-Isopropyltoluene	ND	0.313	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
4-Methyl-2-pentanone	ND	3.33	8.34		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Methylene chloride	ND	1.67	2.50		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
n-Butylbenzene	ND	0.406	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
n-Propylbenzene	ND	0.298	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
sec-Butylbenzene	ND	0.296	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Styrene	ND	0.213	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
tert-Butylbenzene	ND	0.244	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Tetrachloroethene (PCE)	ND	0.219	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (2-2.5')
Project: SWMU 10
Collection Date: 5/18/2016 4:35:00 PM
Lab ID: 1605943-004
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.168	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
trans-1,3-Dichloropropene	ND	0.202	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.403	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.506	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1,1-Trichloroethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,1,2-Trichloroethane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Trichloroethene (TCE)	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Trichlorofluoromethane	ND	0.209	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
1,2,3-Trichloropropane	ND	1.67	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Vinyl chloride	ND	0.439	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Xylenes, Total	ND	0.664	1.67		µg/Kg-dry	1	5/25/2016 6:14:00 PM	25468
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	5/25/2016 6:14:00 PM	25468
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	5/25/2016 6:14:00 PM	25468
Surr: Dibromofluoromethane	93.8	0	70-130		%Rec	1	5/25/2016 6:14:00 PM	25468
Surr: Toluene-d8	97.4	0	70-130		%Rec	1	5/25/2016 6:14:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.60	0.49	3.2	J	mg/Kg-dr	1	5/24/2016 2:01:48 PM	A34454
Surr: BFB	97.6	0	70-130		%Rec	1	5/24/2016 2:01:48 PM	A34454

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (8-9')
Project: SWMU 10
Collection Date: 5/18/2016 4:50:00 PM
Lab ID: 1605943-005 **Matrix:** SOIL **Received Date:** 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.1	11		mg/Kg-dr	1	5/24/2016 2:11:34 PM	25449
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/24/2016 2:11:34 PM	25449
Surr: DNOP	92.7	0	70-130		%Rec	1	5/24/2016 2:11:34 PM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	ND	0.00067	0.039		mg/Kg-dr	1	5/26/2016 3:51:37 PM	25509
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	2.9	6.1		mg/Kg-dr	2	5/31/2016 10:19:25 AM	25508
Arsenic	2.6	0.88	3.0	J	mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Barium	350	0.12	0.24		mg/Kg-dr	2	5/31/2016 10:19:25 AM	25508
Beryllium	0.97	0.0056	0.18		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Cadmium	ND	0.077	0.12		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Chromium	13	0.15	0.36		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Cobalt	7.8	0.046	0.36		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Iron	17000	120	300		mg/Kg-dr	100	5/31/2016 10:17:54 AM	25508
Lead	3.2	0.21	0.30		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Manganese	520	0.11	0.24		mg/Kg-dr	2	5/31/2016 10:19:25 AM	25508
Nickel	15	0.14	0.61		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Vanadium	17	0.042	3.0		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
Zinc	23	0.69	3.0		mg/Kg-dr	1	5/26/2016 4:13:12 PM	25508
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benzo(a)pyrene	ND	0.091	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benzoic acid	ND	0.099	0.60		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (8-9')
Project: SWMU 10
Collection Date: 5/18/2016 4:50:00 PM
Lab ID: 1605943-005
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.088	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Bis(2-ethylhexyl)phthalate	0.17	0.098	0.60	J	mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Di-n-butyl phthalate	0.11	0.089	0.48	J	mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
1,3-Dichlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
3,3´-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Fluorene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
1-Methylnaphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2-Methylnaphthalene	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2-Methylphenol	ND	0.10	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
3+4-Methylphenol	ND	0.087	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (8-9')
Project: SWMU 10
Collection Date: 5/18/2016 4:50:00 PM
Lab ID: 1605943-005
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Phenanthrene	ND	0.081	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Phenol	ND	0.090	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Pyrene	ND	0.090	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	5/26/2016 8:23:56 PM	25469
Surr: 2-Fluorophenol	54.0	0	28.3-102		%Rec	1	5/26/2016 8:23:56 PM	25469
Surr: Phenol-d5	55.0	0	35.7-103		%Rec	1	5/26/2016 8:23:56 PM	25469
Surr: 2,4,6-Tribromophenol	68.4	0	35.2-108		%Rec	1	5/26/2016 8:23:56 PM	25469
Surr: Nitrobenzene-d5	61.5		24-118		%Rec	1	5/26/2016 8:23:56 PM	25469
Surr: 2-Fluorobiphenyl	67.3		35.4-111		%Rec	1	5/26/2016 8:23:56 PM	25469
Surr: 4-Terphenyl-d14	59.9		15-91.7		%Rec	1	5/26/2016 8:23:56 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	9.54	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Toluene	7.02	0.268	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Ethylbenzene	1.43	0.298	2.22	J	µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.373	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2,4-Trimethylbenzene	1.08	0.376	2.22	J	µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,3,5-Trimethylbenzene	0.677	0.366	2.22	J	µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Naphthalene	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1-Methylnaphthalene	ND	0.252	4.44		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
2-Methylnaphthalene	ND	0.584	4.44		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Acetone	2.93	0.657	11.1	J	µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Bromobenzene	ND	0.226	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Bromodichloromethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Bromoform	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (8-9')
Project: SWMU 10
Collection Date: 5/18/2016 4:50:00 PM
Lab ID: 1605943-005
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.400	3.33		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
2-Butanone	ND	0.800	11.1		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Carbon disulfide	ND	0.821	11.1		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Carbon tetrachloride	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Chlorobenzene	ND	0.255	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Chloroethane	ND	0.410	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Chloroform	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Chloromethane	ND	0.562	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
2-Chlorotoluene	ND	0.378	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
4-Chlorotoluene	ND	0.369	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
cis-1,2-DCE	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
cis-1,3-Dichloropropene	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.236	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Dibromochloromethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Dibromomethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2-Dichlorobenzene	ND	0.323	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,3-Dichlorobenzene	ND	0.410	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,4-Dichlorobenzene	ND	0.415	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Dichlorodifluoromethane	ND	1.30	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1-Dichloroethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1-Dichloroethene	ND	0.363	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2-Dichloropropane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,3-Dichloropropane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
2,2-Dichloropropane	ND	0.280	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1-Dichloropropene	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Hexachlorobutadiene	ND	0.506	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
2-Hexanone	ND	0.553	11.1		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Isopropylbenzene	ND	0.279	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
4-Isopropyltoluene	ND	0.416	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
4-Methyl-2-pentanone	ND	4.44	11.1		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Methylene chloride	ND	2.22	3.33		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
n-Butylbenzene	ND	0.540	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
n-Propylbenzene	ND	0.397	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
sec-Butylbenzene	ND	0.394	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Styrene	ND	0.284	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
tert-Butylbenzene	ND	0.324	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Tetrachloroethene (PCE)	ND	0.292	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-22 (8-9')
Project: SWMU 10
Collection Date: 5/18/2016 4:50:00 PM
Lab ID: 1605943-005
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.224	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
trans-1,3-Dichloropropene	ND	0.269	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.537	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.673	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1,1-Trichloroethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,1,2-Trichloroethane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Trichloroethene (TCE)	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Trichlorofluoromethane	ND	0.279	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
1,2,3-Trichloropropane	ND	2.22	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Vinyl chloride	ND	0.584	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Xylenes, Total	4.19	0.885	2.22		µg/Kg-dry	1	5/25/2016 6:39:00 PM	25468
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	5/25/2016 6:39:00 PM	25468
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	5/25/2016 6:39:00 PM	25468
Surr: Dibromofluoromethane	90.9	0	70-130		%Rec	1	5/25/2016 6:39:00 PM	25468
Surr: Toluene-d8	96.4	0	70-130		%Rec	1	5/25/2016 6:39:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.73	0.52	3.4	J	mg/Kg-dr	1	5/24/2016 2:30:18 PM	A34454
Surr: BFB	97.7	0	70-130		%Rec	1	5/24/2016 2:30:18 PM	A34454

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: DUP01
Project: SWMU 10
Collection Date: 5/18/2016
Lab ID: 1605943-006
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	4.3	12		mg/Kg-dr	1	5/25/2016 9:22:37 AM	25449
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	5/25/2016 9:22:37 AM	25449
Surr: DNOP	106	0	70-130		%Rec	1	5/25/2016 9:22:37 AM	25449
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	19	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.018	0.00071	0.041	J	mg/Kg-dr	1	5/26/2016 3:53:25 PM	25509
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	7.3	15		mg/Kg-dr	5	5/31/2016 10:28:43 AM	25508
Arsenic	2.2	0.90	3.1	J	mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Barium	730	0.30	0.62		mg/Kg-dr	5	5/31/2016 10:28:43 AM	25508
Beryllium	0.90	0.0057	0.18		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Cadmium	ND	0.078	0.12		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Chromium	9.8	0.15	0.37		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Cobalt	4.4	0.047	0.37		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Iron	14000	60	150		mg/Kg-dr	50	5/31/2016 10:21:09 AM	25508
Lead	4.6	0.22	0.31		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Manganese	510	0.27	0.62		mg/Kg-dr	5	5/31/2016 10:28:43 AM	25508
Nickel	8.0	0.14	0.62		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Selenium	ND	1.3	3.1		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Silver	ND	0.039	0.31		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Vanadium	19	0.043	3.1		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
Zinc	24	0.70	3.1		mg/Kg-dr	1	5/26/2016 4:14:40 PM	25508
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Acenaphthylene	ND	0.099	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Anthracene	ND	0.081	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benzo(a)pyrene	ND	0.092	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benzoic acid	ND	0.10	0.61		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Benzyl alcohol	ND	0.095	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: DUP01
Project: SWMU 10
Collection Date: 5/18/2016
Lab ID: 1605943-006
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.089	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Bis(2-ethylhexyl)phthalate	0.16	0.099	0.61	J	mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Carbazole	ND	0.082	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.61		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4-Chloroaniline	ND	0.13	0.61		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2-Chloronaphthalene	ND	0.096	0.30		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2-Chlorophenol	ND	0.096	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Di-n-butyl phthalate	ND	0.091	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Di-n-octyl phthalate	ND	0.10	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Dibenz(a,h)anthracene	ND	0.098	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
1,2-Dichlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
1,3-Dichlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
3,3´-Dichlorobenzidine	ND	0.089	0.30		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,4-Dichlorophenol	ND	0.11	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.073	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,4-Dinitrophenol	ND	0.080	0.61		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.61		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.61		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Fluoranthene	ND	0.070	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Fluorene	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Hexachlorobenzene	ND	0.096	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Hexachlorobutadiene	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.095	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
1-Methylnaphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2-Methylnaphthalene	ND	0.14	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2-Methylphenol	ND	0.10	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
3+4-Methylphenol	ND	0.088	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: DUP01
Project: SWMU 10
Collection Date: 5/18/2016
Lab ID: 1605943-006
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Naphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4-Nitroaniline	ND	0.086	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
4-Nitrophenol	ND	0.092	0.30		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Pentachlorophenol	ND	0.078	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Phenanthrene	ND	0.082	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Phenol	ND	0.091	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Pyrene	ND	0.092	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Pyridine	ND	0.096	0.49		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.24		mg/Kg-dr	1	5/26/2016 8:54:00 PM	25469
Surr: 2-Fluorophenol	32.2	0	28.3-102		%Rec	1	5/26/2016 8:54:00 PM	25469
Surr: Phenol-d5	37.7	0	35.7-103		%Rec	1	5/26/2016 8:54:00 PM	25469
Surr: 2,4,6-Tribromophenol	61.5	0	35.2-108		%Rec	1	5/26/2016 8:54:00 PM	25469
Surr: Nitrobenzene-d5	36.4		24-118		%Rec	1	5/26/2016 8:54:00 PM	25469
Surr: 2-Fluorobiphenyl	45.6		35.4-111		%Rec	1	5/26/2016 8:54:00 PM	25469
Surr: 4-Terphenyl-d14	65.4		15-91.7		%Rec	1	5/26/2016 8:54:00 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Toluene	0.918	0.217	1.80	J	µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Ethylbenzene	ND	0.242	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.302	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2,4-Trimethylbenzene	ND	0.305	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.297	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2-Dichloroethane (EDC)	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2-Dibromoethane (EDB)	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Naphthalene	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1-Methylnaphthalene	ND	0.205	3.60		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
2-Methylnaphthalene	ND	0.474	3.60		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Acetone	8.23	0.533	9.00	J	µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Bromobenzene	ND	0.183	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Bromodichloromethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Bromoform	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: DUP01
Project: SWMU 10
Collection Date: 5/18/2016
Lab ID: 1605943-006
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Bromomethane	ND	0.324	2.70		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
2-Butanone	ND	0.649	9.00		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Carbon disulfide	ND	0.666	9.00		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Carbon tetrachloride	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Chlorobenzene	ND	0.206	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Chloroethane	ND	0.332	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Chloroform	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Chloromethane	ND	0.456	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
2-Chlorotoluene	ND	0.306	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
4-Chlorotoluene	ND	0.299	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
cis-1,2-DCE	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
cis-1,3-Dichloropropene	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.192	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Dibromochloromethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Dibromomethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2-Dichlorobenzene	ND	0.262	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,3-Dichlorobenzene	ND	0.332	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,4-Dichlorobenzene	ND	0.337	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Dichlorodifluoromethane	ND	1.05	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1-Dichloroethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1-Dichloroethene	ND	0.295	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2-Dichloropropane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,3-Dichloropropane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
2,2-Dichloropropane	ND	0.227	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1-Dichloropropene	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Hexachlorobutadiene	ND	0.410	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
2-Hexanone	ND	0.448	9.00		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Isopropylbenzene	ND	0.226	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
4-Isopropyltoluene	ND	0.338	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
4-Methyl-2-pentanone	ND	3.60	9.00		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Methylene chloride	ND	1.80	2.70		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
n-Butylbenzene	ND	0.438	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
n-Propylbenzene	ND	0.322	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
sec-Butylbenzene	ND	0.320	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Styrene	ND	0.230	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
tert-Butylbenzene	ND	0.263	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Tetrachloroethene (PCE)	ND	0.236	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: DUP01
Project: SWMU 10
Collection Date: 5/18/2016
Lab ID: 1605943-006
Matrix: SOIL
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,2-DCE	ND	0.182	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
trans-1,3-Dichloropropene	ND	0.218	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.435	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.546	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1,1-Trichloroethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,1,2-Trichloroethane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Trichloroethene (TCE)	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Trichlorofluoromethane	ND	0.226	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
1,2,3-Trichloropropane	ND	1.80	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Vinyl chloride	ND	0.473	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Xylenes, Total	ND	0.717	1.80		µg/Kg-dry	1	5/25/2016 7:04:00 PM	25468
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	5/25/2016 7:04:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 7:04:00 PM	25468
Surr: Dibromofluoromethane	92.5	0	70-130		%Rec	1	5/25/2016 7:04:00 PM	25468
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	5/25/2016 7:04:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.70	0.51	3.4	J	mg/Kg-dr	1	5/24/2016 2:58:36 PM	A34454
Surr: BFB	99.9	0	70-130		%Rec	1	5/24/2016 2:58:36 PM	A34454

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1605943-007
Matrix: MEOH BLAN
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.020	0.025		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Toluene	ND	0.0030	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Ethylbenzene	ND	0.0041	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Methyl tert-butyl ether (MTBE)	ND	0.016	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2,4-Trimethylbenzene	ND	0.0037	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,3,5-Trimethylbenzene	ND	0.0036	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2-Dichloroethane (EDC)	ND	0.013	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2-Dibromoethane (EDB)	ND	0.0036	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Naphthalene	0.023	0.0078	0.10	J	mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1-Methylnaphthalene	0.050	0.011	0.20	J	mg/Kg	1	5/24/2016 3:55:15 PM	C34454
2-Methylnaphthalene	0.060	0.011	0.20	J	mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Acetone	ND	0.065	0.75		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Bromobenzene	ND	0.0040	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Bromodichloromethane	ND	0.0029	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Bromoform	ND	0.0061	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Bromomethane	ND	0.018	0.15		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
2-Butanone	ND	0.029	0.50		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Carbon tetrachloride	ND	0.0033	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Chlorobenzene	ND	0.0041	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Chloroethane	ND	0.010	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Chloroform	ND	0.0038	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Chloromethane	ND	0.0044	0.15		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
2-Chlorotoluene	ND	0.0037	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
4-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
cis-1,2-DCE	ND	0.0029	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
cis-1,3-Dichloropropene	ND	0.0046	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2-Dibromo-3-chloropropane	ND	0.015	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Dibromochloromethane	ND	0.0045	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Dibromomethane	ND	0.0043	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2-Dichlorobenzene	ND	0.0044	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,3-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Dichlorodifluoromethane	ND	0.015	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,1-Dichloroethane	ND	0.0027	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,1-Dichloroethene	ND	0.016	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2-Dichloropropane	ND	0.0042	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,3-Dichloropropane	ND	0.0057	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
2,2-Dichloropropane	ND	0.0029	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1605943-007
Matrix: MEOH BLAN
Received Date: 5/19/2016 4:30:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0040	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Hexachlorobutadiene	ND	0.0061	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
2-Hexanone	ND	0.027	0.50		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Isopropylbenzene	ND	0.0043	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
4-Isopropyltoluene	ND	0.0045	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
4-Methyl-2-pentanone	ND	0.015	0.50		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Methylene chloride	0.016	0.014	0.15	J	mg/Kg	1	5/24/2016 3:55:15 PM	C34454
n-Butylbenzene	ND	0.0044	0.15		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
n-Propylbenzene	ND	0.0038	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
sec-Butylbenzene	ND	0.0069	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Styrene	ND	0.0045	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
tert-Butylbenzene	ND	0.0041	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,1,1,2-Tetrachloroethane	ND	0.0048	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,1,2,2-Tetrachloroethane	ND	0.0081	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Tetrachloroethene (PCE)	ND	0.0041	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
trans-1,2-DCE	ND	0.014	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
trans-1,3-Dichloropropene	ND	0.0073	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2,3-Trichlorobenzene	ND	0.0075	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2,4-Trichlorobenzene	ND	0.0053	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,1,1-Trichloroethane	ND	0.0031	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,1,2-Trichloroethane	ND	0.0059	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Trichloroethene (TCE)	ND	0.0054	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Trichlorofluoromethane	ND	0.0037	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
1,2,3-Trichloropropane	ND	0.0086	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Vinyl chloride	ND	0.0041	0.050		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Xylenes, Total	ND	0.0095	0.10		mg/Kg	1	5/24/2016 3:55:15 PM	C34454
Surr: Dibromofluoromethane	86.8		70-130		%Rec	1	5/24/2016 3:55:15 PM	C34454
Surr: 1,2-Dichloroethane-d4	78.8		70-130		%Rec	1	5/24/2016 3:55:15 PM	C34454
Surr: Toluene-d8	99.5		70-130		%Rec	1	5/24/2016 3:55:15 PM	C34454
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	1	5/24/2016 3:55:15 PM	C34454

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Qualifiers:

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Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 19:13	WG874409

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	2.20		0.0390	0.250	1	05/31/2016 10:25	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 19:13	WG874409

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0485	J	0.0390	0.250	1	05/31/2016 10:27	WG875385

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 19:15	WG874409

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0438	J	0.0390	0.250	1	06/02/2016 09:27	WG876669

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 19:16	WG874409

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	0.0403	J	0.0390	0.250	1	06/02/2016 09:28	WG876669

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 19:16	WG874403

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	U		0.0390	0.250	1	06/02/2016 09:29	WG876663

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 19:17	WG874409

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	06/02/2016 09:30	WG876669

Method Blank (MB)

(MB) R3140072-1 05/26/16 18:42

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L837120-10 Original Sample (OS) • Duplicate (DUP)

(OS) L837120-10 05/26/16 18:49 • (DUP) R3140072-4 05/26/16 18:49

	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	ND	1	0.000		20

L837333-03 Original Sample (OS) • Duplicate (DUP)

(OS) L837333-03 05/26/16 19:15 • (DUP) R3140072-8 05/26/16 19:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140072-2 05/26/16 18:43 • (LCSD) R3140072-3 05/26/16 18:44

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chromium,Hexavalent	56.9	60.0	62.8	105	110	80.0-120			5.00	20

L837120-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L837120-10 05/26/16 18:49 • (MS) R3140072-5 05/26/16 18:52 • (MSD) R3140072-6 05/26/16 18:53

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	23.8	U	17.9	17.9	75.0	75.0	1	75.0-125			0.000	20

Method Blank (MB)

(MB) R3140567-4 05/31/16 10:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

L837333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L837333-01 05/31/16 10:25 • (DUP) R3140567-7 05/31/16 10:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Cyanide	2.20	2.52	1	13.0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140567-5 05/31/16 10:12 • (LCSD) R3140567-6 05/31/16 10:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Cyanide	48.4	66.4	59.4	137	123	50.0-150			11.0	20

Method Blank (MB)

(MB) R3141092-4 06/02/16 09:22

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

L837358-05 Original Sample (OS) • Duplicate (DUP)

(OS) L837358-05 06/02/16 09:36 • (DUP) R3141092-7 06/02/16 09:37

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Cyanide	0.104	ND	1	47.0	J P1	20

L837397-01 Original Sample (OS) • Duplicate (DUP)

(OS) L837397-01 06/02/16 09:58 • (DUP) R3141092-8 06/02/16 09:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Cyanide	ND	ND	10	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3141092-5 06/02/16 09:23 • (LCSD) R3141092-6 06/02/16 09:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Cyanide	48.4	49.0	43.2	101	89.0	50.0-150			13.0	20

L837397-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L837397-03 06/02/16 10:01 • (MS) R3141092-9 06/02/16 10:02 • (MSD) R3141092-10 06/02/16 10:03

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Cyanide	3.78	1.10	3.76	4.23	70.0	83.0	1	80.0-120	J6		12.0	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-25449**	SampType: **LCS**		TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID: **25449**		RunNo: **34433**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1061812**		Units: **mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	62.6	124			
Surr: DNOP	5.5		5.000		109	70	130			

Sample ID	**MB-25449**	SampType: **MBLK**		TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID: **25449**		RunNo: **34433**					
Prep Date:	**5/23/2016**	Analysis Date: **5/24/2016**		SeqNo: **1061813**		Units: **mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **C34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062796** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **C34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062796** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.50		0.5000		99.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.7	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **C34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	70	130			
Toluene	0.97	0.050	1.000	0	97.4	70	130			
Chlorobenzene	0.95	0.050	1.000	0	95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **C34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	106	70	130			
Trichloroethene (TCE)	0.98	0.050	1.000	0	98.2	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.0	70	130			
Surr: Toluene-d8	0.49		0.5000		98.0	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS-25468**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063539** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.2	2.00	10.00	0	102	70	130			
Toluene	11.1	2.00	10.00	0	111	70	130			
Chlorobenzene	11.1	2.00	10.00	0	111	70	130			
1,1-Dichloroethene	10.3	2.00	10.00	0	103	68	129			
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.00		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.76		10.00		87.6	70	130			
Surr: Toluene-d8	9.90		10.00		99.0	70	130			

Sample ID **LCSD-25468**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063540** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.3	2.00	10.00	0	103	70	130	1.08	0	
Toluene	11.2	2.00	10.00	0	112	70	130	0.629	0	
Chlorobenzene	11.3	2.00	10.00	0	113	70	130	1.96	0	
1,1-Dichloroethene	10.4	2.00	10.00	0	104	68	129	1.16	0	
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130	0.295	0	
Surr: 1,2-Dichloroethane-d4	8.93		10.00		89.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.1		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	8.72		10.00		87.2	70	130	0	0	
Surr: Toluene-d8	9.86		10.00		98.6	70	130	0	0	

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.00								
Toluene	ND	2.00								
Ethylbenzene	ND	2.00								
Methyl tert-butyl ether (MTBE)	ND	2.00								
1,2,4-Trimethylbenzene	ND	2.00								
1,3,5-Trimethylbenzene	ND	2.00								
1,2-Dichloroethane (EDC)	ND	2.00								
1,2-Dibromoethane (EDB)	ND	2.00								
Naphthalene	ND	2.00								
1-Methylnaphthalene	ND	4.00								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.00								
Acetone	ND	10.0								
Bromobenzene	ND	2.00								
Bromodichloromethane	ND	2.00								
Bromoform	ND	2.00								
Bromomethane	ND	3.00								
2-Butanone	ND	10.0								
Carbon disulfide	ND	10.0								
Carbon tetrachloride	ND	2.00								
Chlorobenzene	ND	2.00								
Chloroethane	ND	2.00								
Chloroform	ND	2.00								
Chloromethane	ND	2.00								
2-Chlorotoluene	ND	2.00								
4-Chlorotoluene	ND	2.00								
cis-1,2-DCE	ND	2.00								
cis-1,3-Dichloropropene	ND	2.00								
1,2-Dibromo-3-chloropropane	ND	2.00								
Dibromochloromethane	ND	2.00								
Dibromomethane	ND	2.00								
1,2-Dichlorobenzene	ND	2.00								
1,3-Dichlorobenzene	ND	2.00								
1,4-Dichlorobenzene	ND	2.00								
Dichlorodifluoromethane	ND	2.00								
1,1-Dichloroethane	ND	2.00								
1,1-Dichloroethene	ND	2.00								
1,2-Dichloropropane	ND	2.00								
1,3-Dichloropropane	ND	2.00								
2,2-Dichloropropane	ND	2.00								
1,1-Dichloropropene	ND	2.00								
Hexachlorobutadiene	ND	2.00								
2-Hexanone	ND	10.0								
Isopropylbenzene	ND	2.00								
4-Isopropyltoluene	ND	2.00								
4-Methyl-2-pentanone	ND	10.0								
Methylene chloride	ND	3.00								
n-Butylbenzene	ND	2.00								
n-Propylbenzene	ND	2.00								
sec-Butylbenzene	ND	2.00								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**
28-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-25468**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **25468**	RunNo: **34484**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063541** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	2.00								
tert-Butylbenzene	ND	2.00								
1,1,1,2-Tetrachloroethane	ND	2.00								
1,1,2,2-Tetrachloroethane	ND	2.00								
Tetrachloroethene (PCE)	ND	2.00								
trans-1,2-DCE	ND	2.00								
trans-1,3-Dichloropropene	ND	2.00								
1,2,3-Trichlorobenzene	ND	2.00								
1,2,4-Trichlorobenzene	ND	2.00								
1,1,1-Trichloroethane	ND	2.00								
1,1,2-Trichloroethane	ND	2.00								
Trichloroethene (TCE)	ND	2.00								
Trichlorofluoromethane	ND	2.00								
1,2,3-Trichloropropane	ND	2.00								
Vinyl chloride	ND	2.00								
Xylenes, Total	ND	2.00								
Surr: 1,2-Dichloroethane-d4	8.94		10.00		89.4	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.80		10.00		88.0	70	130			
Surr: Toluene-d8	9.82		10.00		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25469**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.15	0.50								J
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	0.12	0.40								J
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	0.087	0.40								J
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25469**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.0		3.330		60.1	28.3	102			
Surr: Phenol-d5	2.2		3.330		65.9	35.7	103			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.8	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		68.4	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		73.2	35.4	111			
Surr: 4-Terphenyl-d14	1.1		1.670		64.4	15	91.7			

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-25469**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **25469**	RunNo: **34461**
Prep Date: **5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063512** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	70.0	45.8	99.8			
4-Chloro-3-methylphenol	2.2	0.50	3.330	0	66.5	51.5	103			
2-Chlorophenol	1.8	0.20	3.330	0	54.1	46.5	105			
1,4-Dichlorobenzene	0.86	0.20	1.670	0	51.3	45.5	103			
2,4-Dinitrotoluene	1.1	0.50	1.670	0	66.9	36	87.2			
N-Nitrosodi-n-propylamine	0.80	0.20	1.670	0	48.1	47.3	104			
4-Nitrophenol	2.2	0.25	3.330	0	65.7	47.3	95.3			
Pentachlorophenol	1.9	0.40	3.330	0	56.6	38.7	89.3			
Phenol	1.8	0.20	3.330	0	54.5	47.8	106			
Pyrene	1.2	0.20	1.670	0	72.6	33.4	105			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	61.4	50.4	115			
Surr: 2-Fluorophenol	1.6		3.330		47.4	28.3	102			
Surr: Phenol-d5	1.9		3.330		56.0	35.7	103			
Surr: 2,4,6-Tribromophenol	2.2		3.330		66.3	35.2	108			
Surr: Nitrobenzene-d5	1.0		1.670		59.7	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		70.2	35.4	111			
Surr: 4-Terphenyl-d14	0.74		1.670		44.5	15	91.7			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25509**	SampType: **MBLK**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID: **25509**			RunNo: **34523**				
Prep Date:	**5/25/2016**	Analysis Date: **5/26/2016**			SeqNo: **1064862**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-25509**	SampType: **LCS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID: **25509**			RunNo: **34523**				
Prep Date:	**5/25/2016**	Analysis Date: **5/26/2016**			SeqNo: **1064863**		Units: **mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	98.8	80	120			

Sample ID	**1605943-001BMS**	SampType: **MS**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**SWMU 10-21 (2-2.5')**	Batch ID: **25509**			RunNo: **34523**				
Prep Date:	**5/25/2016**	Analysis Date: **5/26/2016**			SeqNo: **1064865**		Units: **mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.23	0.036	0.1803	0.05558	98.8	75	125			

Sample ID	**1605943-001BMSD**	SampType: **MSD**			TestCode: **EPA Method 7471: Mercury**				
Client ID:	**SWMU 10-21 (2-2.5')**	Batch ID: **25509**			RunNo: **34523**				
Prep Date:	**5/25/2016**	Analysis Date: **5/26/2016**			SeqNo: **1064866**		Units: **mg/Kg-dry**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.23	0.036	0.1817	0.05558	93.9	75	125	3.25	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-25508**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **25508**	RunNo: **34511**
Prep Date: **5/25/2016**	Analysis Date: **5/26/2016**	SeqNo: **1064307** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.7	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-25508**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **25508**	RunNo: **34511**
Prep Date: **5/25/2016**	Analysis Date: **5/26/2016**	SeqNo: **1064308** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.8	80	120			
Arsenic	26	2.5	25.00	0	104	80	120			
Barium	25	0.10	25.00	0	99.1	80	120			
Beryllium	26	0.15	25.00	0	103	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Cobalt	24	0.30	25.00	0	95.6	80	120			
Iron	26	2.5	25.00	0	105	80	120			
Lead	25	0.25	25.00	0	98.3	80	120			
Manganese	25	0.10	25.00	0	99.6	80	120			
Nickel	25	0.50	25.00	0	99.1	80	120			
Selenium	25	2.5	25.00	0	99.6	80	120			
Silver	5.0	0.25	5.000	0	101	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	99.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **1605943-001BMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-21 (2-2.5')**	Batch ID: **25508**	RunNo: **34511**
Prep Date: **5/25/2016**	Analysis Date: **5/26/2016**	SeqNo: **1064368** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	28	2.7	27.29	3.337	90.8	75	125			
Beryllium	25	0.16	27.29	0.7180	89.7	75	125			
Cadmium	24	0.11	27.29	0	88.8	75	125			
Chromium	35	0.33	27.29	9.159	95.8	75	125			
Cobalt	25	0.33	27.29	3.682	76.6	75	125			
Silver	4.8	0.27	5.459	0	88.0	75	125			
Vanadium	47	2.7	27.29	16.05	112	75	125			
Zinc	50	2.7	27.29	16.14	123	75	125			

Sample ID **1605943-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-21 (2-2.5')**	Batch ID: **25508**	RunNo: **34511**
Prep Date: **5/25/2016**	Analysis Date: **5/26/2016**	SeqNo: **1064369** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	29	2.7	26.83	3.337	96.3	75	125	3.65	20	
Beryllium	24	0.16	26.83	0.7180	88.6	75	125	2.80	20	
Cadmium	24	0.11	26.83	0	91.2	75	125	1.00	20	
Chromium	30	0.32	26.83	9.159	76.9	75	125	16.9	20	
Cobalt	23	0.32	26.83	3.682	72.4	75	125	6.20	20	S
Silver	4.8	0.27	5.367	0	89.2	75	125	0.310	20	
Vanadium	40	2.7	26.83	16.05	88.1	75	125	15.8	20	
Zinc	35	2.7	26.83	16.14	70.7	75	125	34.4	20	RS

Sample ID **1605943-001BMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-21 (2-2.5')**	Batch ID: **25508**	RunNo: **34558**
Prep Date: **5/25/2016**	Analysis Date: **5/31/2016**	SeqNo: **1065752** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	8.7	2.7	27.29	0	31.9	75	125			S
Lead	23	0.27	27.29	2.127	74.7	75	125			S
Nickel	27	0.55	27.29	6.041	78.0	75	125			
Selenium	21	2.7	27.29	0	75.9	75	125			

Sample ID **1605943-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-21 (2-2.5')**	Batch ID: **25508**	RunNo: **34558**
Prep Date: **5/25/2016**	Analysis Date: **5/31/2016**	SeqNo: **1065753** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	4.5	2.7	26.83	0	16.9	75	125	63.2	20	RS
Lead	21	0.27	26.83	2.127	71.1	75	125	5.99	20	S

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1605943-001BMSD**	SampType:	**MSD**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**SWMU 10-21 (2-2.5')**	Batch ID:	**25508**	RunNo:	**34558**
Prep Date:	**5/25/2016**	Analysis Date:	**5/31/2016**	SeqNo:	**1065753** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	25	0.54	26.83	6.041	71.1	75	125	8.39	20	S
Selenium	19	2.7	26.83	0	69.3	75	125	10.9	20	S

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605943**

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **A34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	510		500.0		101	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **A34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062582** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	62.9	123			
Surr: BFB	500		500.0		99.4	70	130			

Sample ID **1605943-001bms**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-21 (2-2.5')**	Batch ID: **A34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062584** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.1	20.41	1.968	106	52.3	132			
Surr: BFB	410		408.2		101	70	130			

Sample ID **1605943-001bmsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-21 (2-2.5')**	Batch ID: **A34454**	RunNo: **34454**
Prep Date:	Analysis Date: **5/24/2016**	SeqNo: **1062585** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.1	20.41	1.968	99.4	52.3	132	6.01	20	
Surr: BFB	390		408.2		96.6	70	130	0	0	

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1605943 RcptNo: 1

Received by/date: AG 05/19/16

Logged By: Lindsay Mangin 5/19/2016 4:30:00 PM

Completed By: Lindsay Mangin 5/20/2016 8:48:48 AM

Reviewed By: 05/23/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605943	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED LIST)			Air Bubbles (Y or N)
5-18-16	0905	SOIL	SWMU 10-21 (2-2.5')	JARS-3	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	0915		SWMU 10-21 (12-14')	JARS-3	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1025		SWMU 10-21 (20-22')	JARS-3	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	1635		SWMU 10-22 (2-2.5')	JARS-3	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MeOH	-004										✓					
				VIALS-2	SOBI	-004										✓					

Date	Time	Relinquished by:	Received by:	Date	Time
5.19.16	0715			5/19/16	1230
5/19/16	1430			05/19/16	1630

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605143	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED LIST)				Air Bubbles (Y or N)
5.18.16	1650	SOIL	SWMU 10-22(8-9')	JARS-3	NEAT	-005			✓							✓	✓	✓				
	↓		↓	VIALS-2	MeOH	-005										✓						
	↓		↓	VIALS-2	SOBI	-005										✓						
	—		DUP01	JARS-3	NEAT	-006										✓	✓	✓				
	↓		↓	VIALS-2	MeOH	-006										✓						
	↓	↓	↓	VIALS-2	SOBI	-006										✓						
↓	—	MeOH	MeOH BLANK	VIALS-2	MeOH	-007										✓						

Date	Time	Relinquished by:	Received by:	Date	Time
5.19.16	0715			5/19/16	1230
5/19/16	430			05/19/16	1630

Remarks: PLEASE INCLUDE J FLAGS AND MDL

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 30, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1605998

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/20/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20-GW
Project: SWMU 10
Collection Date: 5/20/2016 10:45:00 AM
Lab ID: 1605998-001
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	440	6.9	10		mg/L	10	5/26/2016 3:40:44 PM	25494
Motor Oil Range Organics (MRO)	ND	50	50		mg/L	10	5/26/2016 3:40:44 PM	25494
Surr: DNOP	0	0	70-141	S	%Rec	10	5/26/2016 3:40:44 PM	25494
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.11	0.50		mg/L	5	5/23/2016 5:26:04 PM	R34434
Chloride	1600	2.7	50		mg/L	100	5/25/2016 3:02:36 PM	R34487
Sulfate	260	1.3	10		mg/L	20	5/23/2016 5:38:29 PM	R34434
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.11	0.0013	0.0020		mg/L	1	5/25/2016 1:47:55 PM	C34463
Beryllium	ND	0.00031	0.0020		mg/L	1	5/25/2016 1:47:55 PM	C34463
Cadmium	ND	0.00075	0.0020		mg/L	1	5/25/2016 1:47:55 PM	C34463
Chromium	ND	0.0018	0.0060		mg/L	1	5/25/2016 1:47:55 PM	C34463
Cobalt	0.0074	0.00074	0.0060		mg/L	1	5/25/2016 1:47:55 PM	C34463
Iron	0.42	0.0091	0.020	*	mg/L	1	5/25/2016 1:47:55 PM	C34463
Manganese	1.2	0.0016	0.010	*	mg/L	5	5/25/2016 1:49:50 PM	C34463
Nickel	0.019	0.0024	0.010		mg/L	1	5/25/2016 1:47:55 PM	C34463
Silver	ND	0.0028	0.0050		mg/L	1	5/25/2016 1:47:55 PM	C34463
Vanadium	0.010	0.0013	0.050	J	mg/L	1	5/25/2016 1:47:55 PM	C34463
Zinc	0.046	0.0028	0.010		mg/L	1	5/25/2016 1:47:55 PM	C34463
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.26	0.0013	0.0020		mg/L	1	5/25/2016 11:04:43 AM	25486
Beryllium	0.0011	0.00031	0.0020	J	mg/L	1	5/25/2016 11:04:43 AM	25486
Cadmium	ND	0.00075	0.0020		mg/L	1	5/25/2016 11:04:43 AM	25486
Chromium	0.030	0.0022	0.0060		mg/L	1	5/25/2016 11:04:43 AM	25486
Cobalt	0.011	0.00085	0.0060		mg/L	1	5/25/2016 11:04:43 AM	25486
Iron	7.1	0.091	0.20	*	mg/L	10	6/1/2016 6:14:15 PM	25486
Manganese	1.4	0.015	0.020	*	mg/L	10	5/27/2016 12:19:04 PM	25486
Nickel	0.026	0.0024	0.010		mg/L	1	5/25/2016 11:04:43 AM	25486
Silver	ND	0.0028	0.0050		mg/L	1	5/25/2016 11:04:43 AM	25486
Vanadium	0.024	0.0015	0.050	J	mg/L	1	5/25/2016 11:04:43 AM	25486
Zinc	0.043	0.0039	0.010		mg/L	1	5/25/2016 11:04:43 AM	25486
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0024	0.0050		mg/L	5	5/23/2016 5:07:26 PM	C34426
Arsenic	ND	0.050	0.050		mg/L	50	5/23/2016 6:56:47 PM	C34426
Lead	ND	0.00084	0.0025		mg/L	5	5/23/2016 5:07:26 PM	C34426
Selenium	0.038	0.011	0.050	J	mg/L	50	5/23/2016 6:56:47 PM	C34426
EPA 200.8: METALS							Analyst: **DBD**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20-GW
Project: SWMU 10
Collection Date: 5/20/2016 10:45:00 AM
Lab ID: 1605998-001
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.0024	0.0050		mg/L	5	5/25/2016 2:30:09 PM	25486
Arsenic	0.026	0.0029	0.010	*	mg/L	10	5/25/2016 3:11:35 PM	25486
Lead	0.011	0.00084	0.0025		mg/L	5	5/25/2016 2:30:09 PM	25486
Selenium	0.040	0.0021	0.010		mg/L	10	5/25/2016 3:11:35 PM	25486
EPA METHOD 245.1: MERCURY							Analyst: **pmf**	
Mercury	0.00016	0.000053	0.00020	J	mg/L	1	5/26/2016 6:31:07 PM	25512
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Acenaphthylene	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Aniline	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Anthracene	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Azobenzene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benz(a)anthracene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benzo(a)pyrene	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benzo(b)fluoranthene	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benzo(g,h,i)perylene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benzo(k)fluoranthene	ND	150	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benzoic acid	ND	130	1000	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Benzyl alcohol	ND	150	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Bis(2-chloroethoxy)methane	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Bis(2-chloroethyl)ether	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Bis(2-chloroisopropyl)ether	ND	95	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Bis(2-ethylhexyl)phthalate	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
4-Bromophenyl phenyl ether	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Butyl benzyl phthalate	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Carbazole	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
4-Chloro-3-methylphenol	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
4-Chloroaniline	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2-Chloronaphthalene	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2-Chlorophenol	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
4-Chlorophenyl phenyl ether	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Chrysene	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Di-n-butyl phthalate	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Di-n-octyl phthalate	ND	99	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Dibenz(a,h)anthracene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Dibenzofuran	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
1,2-Dichlorobenzene	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
1,3-Dichlorobenzene	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20-GW
Project: SWMU 10
Collection Date: 5/20/2016 10:45:00 AM
Lab ID: 1605998-001
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
3,3´-Dichlorobenzidine	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Diethyl phthalate	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Dimethyl phthalate	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2,4-Dichlorophenol	ND	120	1000	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2,4-Dimethylphenol	62000	1500	5000		µg/L	100	5/25/2016 11:48:15 AM	25437
4,6-Dinitro-2-methylphenol	ND	90	1000	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2,4-Dinitrophenol	ND	140	1000	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2,4-Dinitrotoluene	ND	160	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2,6-Dinitrotoluene	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Fluoranthene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Fluorene	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Hexachlorobenzene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Hexachlorobutadiene	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Hexachlorocyclopentadiene	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Hexachloroethane	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Indeno(1,2,3-cd)pyrene	ND	150	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Isophorone	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
1-Methylnaphthalene	170	150	500	JD	µg/L	10	5/24/2016 4:35:11 PM	25437
2-Methylnaphthalene	240	140	500	JD	µg/L	10	5/24/2016 4:35:11 PM	25437
2-Methylphenol	130000	2500	10000		µg/L	200	5/25/2016 11:18:11 AM	25437
3+4-Methylphenol	190000	2300	10000		µg/L	200	5/25/2016 11:18:11 AM	25437
N-Nitrosodi-n-propylamine	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
N-Nitrosodimethylamine	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
N-Nitrosodiphenylamine	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Naphthalene	240	130	500	JD	µg/L	10	5/24/2016 4:35:11 PM	25437
2-Nitroaniline	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
3-Nitroaniline	ND	150	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
4-Nitroaniline	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Nitrobenzene	ND	140	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2-Nitrophenol	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
4-Nitrophenol	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Pentachlorophenol	ND	120	1000	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Phenanthrene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Phenol	89000	990	5000		µg/L	100	5/25/2016 11:48:15 AM	25437
Pyrene	ND	150	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Pyridine	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
1,2,4-Trichlorobenzene	ND	130	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
2,4,5-Trichlorophenol	ND	110	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20-GW
Project: SWMU 10
Collection Date: 5/20/2016 10:45:00 AM
Lab ID: 1605998-001
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	120	500	D	µg/L	10	5/24/2016 4:35:11 PM	25437
Surr: 2-Fluorophenol	67.7	0	15-123	D	%Rec	10	5/24/2016 4:35:11 PM	25437
Surr: Phenol-d5	42.0	0	4.13-124	D	%Rec	10	5/24/2016 4:35:11 PM	25437
Surr: 2,4,6-Tribromophenol	92.8	0	18.4-134	D	%Rec	10	5/24/2016 4:35:11 PM	25437
Surr: Nitrobenzene-d5	107	0	28.8-134	D	%Rec	10	5/24/2016 4:35:11 PM	25437
Surr: 2-Fluorobiphenyl	96.4	0	35.9-125	D	%Rec	10	5/24/2016 4:35:11 PM	25437
Surr: 4-Terphenyl-d14	76.6	0	15-146	D	%Rec	10	5/24/2016 4:35:11 PM	25437
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	1600	9.6	100		µg/L	100	5/26/2016 4:43:13 PM	A34513
Toluene	4000	12	100		µg/L	100	5/26/2016 4:43:13 PM	A34513
Ethylbenzene	290	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Methyl tert-butyl ether (MTBE)	3.8	2.1	10	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2,4-Trimethylbenzene	220	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,3,5-Trimethylbenzene	64	1.2	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2-Dichloroethane (EDC)	ND	1.2	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2-Dibromoethane (EDB)	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Naphthalene	310	0.93	20		µg/L	10	5/26/2016 12:37:51 PM	A34513
1-Methylnaphthalene	140	2.0	40		µg/L	10	5/26/2016 12:37:51 PM	A34513
2-Methylnaphthalene	210	1.6	40		µg/L	10	5/26/2016 12:37:51 PM	A34513
Acetone	1400	49	100		µg/L	10	5/26/2016 12:37:51 PM	A34513
Bromobenzene	ND	0.98	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Bromodichloromethane	ND	1.4	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Bromoform	ND	1.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Bromomethane	ND	7.8	30		µg/L	10	5/26/2016 12:37:51 PM	A34513
2-Butanone	630	7.4	100		µg/L	10	5/26/2016 12:37:51 PM	A34513
Carbon disulfide	ND	6.0	100		µg/L	10	5/26/2016 12:37:51 PM	A34513
Carbon Tetrachloride	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Chlorobenzene	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Chloroethane	ND	1.9	20		µg/L	10	5/26/2016 12:37:51 PM	A34513
Chloroform	ND	0.89	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Chloromethane	ND	2.1	30		µg/L	10	5/26/2016 12:37:51 PM	A34513
2-Chlorotoluene	ND	4.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
4-Chlorotoluene	ND	1.3	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
cis-1,2-DCE	ND	1.2	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
cis-1,3-Dichloropropene	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2-Dibromo-3-chloropropane	ND	2.3	20		µg/L	10	5/26/2016 12:37:51 PM	A34513
Dibromochloromethane	ND	0.87	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Dibromomethane	ND	1.2	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2-Dichlorobenzene	ND	4.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20-GW
Project: SWMU 10
Collection Date: 5/20/2016 10:45:00 AM
Lab ID: 1605998-001
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,3-Dichlorobenzene	ND	1.4	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,4-Dichlorobenzene	ND	1.4	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Dichlorodifluoromethane	ND	3.6	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1-Dichloroethane	6.1	1.1	10	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1-Dichloroethene	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2-Dichloropropane	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,3-Dichloropropane	ND	1.6	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
2,2-Dichloropropane	ND	1.7	20		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1-Dichloropropene	ND	1.3	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Hexachlorobutadiene	ND	2.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
2-Hexanone	69	8.4	100	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
Isopropylbenzene	20	1.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
4-Isopropyltoluene	2.5	1.4	10	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
4-Methyl-2-pentanone	63	4.3	100	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
Methylene Chloride	3.4	1.9	30	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
n-Butylbenzene	4.0	1.6	30	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
n-Propylbenzene	30	1.3	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
sec-Butylbenzene	1.7	1.2	10	J	µg/L	10	5/26/2016 12:37:51 PM	A34513
Styrene	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
tert-Butylbenzene	ND	1.2	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1,1,2-Tetrachloroethane	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1,2,2-Tetrachloroethane	ND	1.3	20		µg/L	10	5/26/2016 12:37:51 PM	A34513
Tetrachloroethene (PCE)	ND	1.5	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
trans-1,2-DCE	ND	4.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
trans-1,3-Dichloropropene	ND	1.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2,3-Trichlorobenzene	ND	1.1	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2,4-Trichlorobenzene	ND	1.3	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1,1-Trichloroethane	ND	0.91	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,1,2-Trichloroethane	ND	1.3	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Trichloroethene (TCE)	ND	1.8	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Trichlorofluoromethane	ND	2.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
1,2,3-Trichloropropane	ND	2.0	20		µg/L	10	5/26/2016 12:37:51 PM	A34513
Vinyl chloride	ND	2.0	10		µg/L	10	5/26/2016 12:37:51 PM	A34513
Xylenes, Total	1900	3.7	15		µg/L	10	5/26/2016 12:37:51 PM	A34513
Surr: 1,2-Dichloroethane-d4	96.2	0	70-130		%Rec	10	5/26/2016 12:37:51 PM	A34513
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	10	5/26/2016 12:37:51 PM	A34513
Surr: Dibromofluoromethane	100	0	70-130		%Rec	10	5/26/2016 12:37:51 PM	A34513
Surr: Toluene-d8	102	0	70-130		%Rec	10	5/26/2016 12:37:51 PM	A34513
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-20-GW
Project: SWMU 10
Collection Date: 5/20/2016 10:45:00 AM
Lab ID: 1605998-001
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	25	0.15	0.50		mg/L	10	5/26/2016 12:37:51 PM	C34513
Surr: BFB	101	0	70-130		%Rec	10	5/26/2016 12:37:51 PM	C34513

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1605998-002
Matrix: TRIP BLANK
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.096	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Toluene	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Naphthalene	ND	0.093	2.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1-Methylnaphthalene	1.1	0.20	4.0	J	µg/L	1	5/26/2016 2:09:48 PM	A34513
2-Methylnaphthalene	1.3	0.16	4.0	J	µg/L	1	5/26/2016 2:09:48 PM	A34513
Acetone	ND	4.9	10		µg/L	1	5/26/2016 2:09:48 PM	A34513
Bromobenzene	ND	0.098	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Bromodichloromethane	ND	0.14	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Bromoform	ND	0.10	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Bromomethane	ND	0.78	3.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
2-Butanone	ND	0.74	10		µg/L	1	5/26/2016 2:09:48 PM	A34513
Carbon disulfide	ND	0.60	10		µg/L	1	5/26/2016 2:09:48 PM	A34513
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Chlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Chloroethane	ND	0.19	2.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Chloroform	ND	0.089	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Chloromethane	ND	0.21	3.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Dibromochloromethane	ND	0.087	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Dibromomethane	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	5/26/2016 2:09:48 PM	A34513

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1605998-002
Matrix: TRIP BLANK
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
2-Hexanone	ND	0.84	10		µg/L	1	5/26/2016 2:09:48 PM	A34513
Isopropylbenzene	ND	0.10	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	5/26/2016 2:09:48 PM	A34513
Methylene Chloride	0.33	0.19	3.0	J	µg/L	1	5/26/2016 2:09:48 PM	A34513
n-Butylbenzene	ND	0.16	3.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
n-Propylbenzene	ND	0.13	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Styrene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/26/2016 2:09:48 PM	A34513
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/26/2016 2:09:48 PM	A34513
Surr: 1,2-Dichloroethane-d4	94.9	0	70-130		%Rec	1	5/26/2016 2:09:48 PM	A34513
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	1	5/26/2016 2:09:48 PM	A34513
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	5/26/2016 2:09:48 PM	A34513
Surr: Toluene-d8	103	0	70-130		%Rec	1	5/26/2016 2:09:48 PM	A34513

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21-GW
Project: SWMU 10
Collection Date: 5/20/2016 9:36:00 AM
Lab ID: 1605998-003
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Acenaphthylene	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Aniline	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Anthracene	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Azobenzene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benz(a)anthracene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benzo(a)pyrene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benzo(b)fluoranthene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benzo(g,h,i)perylene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benzo(k)fluoranthene	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benzoic acid	ND	13	100	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Benzyl alcohol	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Bis(2-chloroethoxy)methane	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Bis(2-chloroethyl)ether	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Bis(2-chloroisopropyl)ether	ND	9.5	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Bis(2-ethylhexyl)phthalate	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4-Bromophenyl phenyl ether	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Butyl benzyl phthalate	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Carbazole	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4-Chloro-3-methylphenol	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4-Chloroaniline	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2-Chloronaphthalene	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2-Chlorophenol	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4-Chlorophenyl phenyl ether	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Chrysene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Di-n-butyl phthalate	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Di-n-octyl phthalate	ND	9.9	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Dibenz(a,h)anthracene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Dibenzofuran	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
1,2-Dichlorobenzene	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
1,3-Dichlorobenzene	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
1,4-Dichlorobenzene	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
3,3´-Dichlorobenzidine	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Diethyl phthalate	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Dimethyl phthalate	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2,4-Dichlorophenol	ND	12	100	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2,4-Dimethylphenol	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4,6-Dinitro-2-methylphenol	ND	9.0	100	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2,4-Dinitrophenol	ND	14	100	D	µg/L	1	5/24/2016 4:04:33 PM	25437

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Qualifiers:

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21-GW
Project: SWMU 10
Collection Date: 5/20/2016 9:36:00 AM
Lab ID: 1605998-003
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4-Dinitrotoluene	ND	16	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2,6-Dinitrotoluene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Fluoranthene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Fluorene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Hexachlorobenzene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Hexachlorobutadiene	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Hexachlorocyclopentadiene	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Hexachloroethane	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Indeno(1,2,3-cd)pyrene	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Isophorone	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
1-Methylnaphthalene	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2-Methylnaphthalene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2-Methylphenol	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
3+4-Methylphenol	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
N-Nitrosodi-n-propylamine	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
N-Nitrosodimethylamine	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
N-Nitrosodiphenylamine	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Naphthalene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2-Nitroaniline	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
3-Nitroaniline	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4-Nitroaniline	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Nitrobenzene	ND	14	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2-Nitrophenol	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
4-Nitrophenol	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Pentachlorophenol	ND	12	100	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Phenanthrene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Phenol	ND	9.9	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Pyrene	ND	15	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Pyridine	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
1,2,4-Trichlorobenzene	ND	13	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2,4,5-Trichlorophenol	ND	11	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
2,4,6-Trichlorophenol	ND	12	50	D	µg/L	1	5/24/2016 4:04:33 PM	25437
Surr: 2-Fluorophenol	55.1	0	15-123	D	%Rec	1	5/24/2016 4:04:33 PM	25437
Surr: Phenol-d5	41.1	0	4.13-124	D	%Rec	1	5/24/2016 4:04:33 PM	25437
Surr: 2,4,6-Tribromophenol	70.0	0	18.4-134	D	%Rec	1	5/24/2016 4:04:33 PM	25437
Surr: Nitrobenzene-d5	74.5	0	28.8-134	D	%Rec	1	5/24/2016 4:04:33 PM	25437
Surr: 2-Fluorobiphenyl	71.6	0	35.9-125	D	%Rec	1	5/24/2016 4:04:33 PM	25437
Surr: 4-Terphenyl-d14	37.0	0	15-146	D	%Rec	1	5/24/2016 4:04:33 PM	25437
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21-GW
Project: SWMU 10
Collection Date: 5/20/2016 9:36:00 AM
Lab ID: 1605998-003
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.15	0.096	1.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Toluene	0.30	0.12	1.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Methyl tert-butyl ether (MTBE)	0.80	0.21	1.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2,4-Trimethylbenzene	0.50	0.11	1.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Naphthalene	1.3	0.093	2.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
1-Methylnaphthalene	3.9	0.20	4.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
2-Methylnaphthalene	4.9	0.16	4.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Acetone	20	4.9	10		µg/L	1	5/26/2016 1:41:29 PM	A34513
Bromobenzene	ND	0.098	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Bromodichloromethane	1.8	0.14	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Bromoform	0.16	0.10	1.0	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Bromomethane	ND	0.78	3.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
2-Butanone	5.7	0.74	10	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Carbon disulfide	ND	0.60	10		µg/L	1	5/26/2016 1:41:29 PM	A34513
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Chlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Chloroethane	ND	0.19	2.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Chloroform	3.4	0.089	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Chloromethane	ND	0.21	3.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Dibromochloromethane	1.3	0.087	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Dibromomethane	ND	0.12	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	5/26/2016 1:41:29 PM	A34513

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-21-GW
Project: SWMU 10
Collection Date: 5/20/2016 9:36:00 AM
Lab ID: 1605998-003
Matrix: AQUEOUS
Received Date: 5/20/2016 3:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
2-Hexanone	3.2	0.84	10	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Isopropylbenzene	ND	0.10	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
4-Methyl-2-pentanone	2.4	0.43	10	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
n-Butylbenzene	ND	0.16	3.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
n-Propylbenzene	ND	0.13	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Styrene	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/26/2016 1:41:29 PM	A34513
Xylenes, Total	0.72	0.37	1.5	J	µg/L	1	5/26/2016 1:41:29 PM	A34513
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	5/26/2016 1:41:29 PM	A34513
Surr: 4-Bromofluorobenzene	113	0	70-130		%Rec	1	5/26/2016 1:41:29 PM	A34513
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	5/26/2016 1:41:29 PM	A34513
Surr: Toluene-d8	101	0	70-130		%Rec	1	5/26/2016 1:41:29 PM	A34513
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.047	0.015	0.050	J	mg/L	1	5/26/2016 1:41:29 PM	C34513
Surr: BFB	102	0	70-130		%Rec	1	5/26/2016 1:41:29 PM	C34513

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Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Cyanide	1.05		0.0180	0.0500	10	05/31/2016 14:43	WG876094

Method Blank (MB)

(MB) R3140646-2 05/31/16 13:55

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Cyanide	0.00218	BJ	0.00180	0.00500

L836467-02 Original Sample (OS) • Duplicate (DUP)

(OS) L836467-02 05/31/16 14:01 • (DUP) R3140646-5 05/31/16 14:02

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	0.00518	ND	1	10.0		20

L837343-01 Original Sample (OS) • Duplicate (DUP)

(OS) L837343-01 05/31/16 14:43 • (DUP) R3140646-8 05/31/16 14:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	1.05	1.18	10	12.0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140646-3 05/31/16 13:56 • (LCSD) R3140646-4 05/31/16 13:57

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Cyanide	0.100	0.103	0.103	103	103	90.0-110			0.000	20

L836467-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836467-03 05/31/16 14:03 • (MS) R3140646-6 05/31/16 14:04 • (MSD) R3140646-7 05/31/16 14:07

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Cyanide	0.200	0.00548	0.187	0.183	91.0	89.0	1	90.0-110		J6	2.00	20

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Hexavalent Chromium	0.000500		0.000150	0.000500	1	05/31/2016 20:03	WG876252

Method Blank (MB)

(MB) R3140841-2 05/31/16 17:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L836719-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836719-01 05/31/16 18:42 • (DUP) R3140841-5 05/31/16 18:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140841-3 05/31/16 18:07 • (LCSD) R3140841-4 05/31/16 18:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00200	0.00200	100	100	90.0-110			0.000	20

L838184-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L838184-02 05/31/16 21:17 • (MS) R3140841-6 05/31/16 21:25 • (MSD) R3140841-7 05/31/16 21:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0522	0.0512	104	102	1	90.0-110			2.00	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25486**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**25486**	RunNo:	**34463**					
Prep Date:	**5/24/2016**	Analysis Date:	**5/25/2016**	SeqNo:	**1062877**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-25486**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**25486**	RunNo:	**34463**					
Prep Date:	**5/24/2016**	Analysis Date:	**5/25/2016**	SeqNo:	**1062878**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.2	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.1	85	115			
Iron	0.50	0.020	0.5000	0	99.9	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Silver	0.099	0.0050	0.1000	0	98.8	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Sample ID	**LLLCS-25486**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**BatchQC**	Batch ID:	**25486**	RunNo:	**34463**					
Prep Date:	**5/24/2016**	Analysis Date:	**5/25/2016**	SeqNo:	**1062880**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0013	0.0020	0.002000	0	66.5	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	103	50	150			
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0050	0.0060	0.006000	0	82.8	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Iron	0.024	0.020	0.02000	0	121	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LLLCS-25486**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**BatchQC**	Batch ID:	**25486**	RunNo:	**34463**					
Prep Date:	**5/24/2016**	Analysis Date:	**5/25/2016**	SeqNo:	**1062880**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0027	0.0020	0.002000	0	136	50	150			
Nickel	0.0056	0.010	0.005000	0	113	50	150			J
Silver	0.0054	0.0050	0.005000	0	109	50	150			
Vanadium	0.0096	0.050	0.01000	0	95.8	50	150			J
Zinc	0.0063	0.010	0.005000	0	126	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C34463**	RunNo: **34463**
Prep Date:	Analysis Date: **5/25/2016**	SeqNo: **1062977** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C34463**	RunNo: **34463**
Prep Date:	Analysis Date: **5/25/2016**	SeqNo: **1062978** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.1	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.8	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.9	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Nickel	0.47	0.010	0.5000	0	93.1	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.3	85	115			

Sample ID **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C34463**	RunNo: **34463**
Prep Date:	Analysis Date: **5/25/2016**	SeqNo: **1062979** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	110	50	150			
Beryllium	0.0022	0.0020	0.002000	0	108	50	150			
Cadmium	0.0020	0.0020	0.002000	0	99.5	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.3	50	150			J
Cobalt	0.0071	0.0060	0.006000	0	118	50	150			
Iron	0.026	0.020	0.02000	0	128	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C34463**	RunNo: **34463**
Prep Date:	Analysis Date: **5/25/2016**	SeqNo: **1062979** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Nickel	0.0042	0.010	0.005000	0	83.8	50	150			J
Silver	0.0055	0.0050	0.005000	0	109	50	150			
Vanadium	0.011	0.050	0.01000	0	109	50	150			J
Zinc	0.0060	0.010	0.005000	0	121	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**
30-Jun-16

Client: Western Refining Company
Project: SWMU 10

Sample ID	**MB-25486**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID:	**PBW**	Batch ID: **25486**	RunNo: **34477**
Prep Date:	**5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063236** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	**MSLCS-25486**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID:	**LCSW**	Batch ID: **25486**	RunNo: **34477**
Prep Date:	**5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063238** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.023	0.0010	0.02500	0	92.3	85	115			
Lead	0.012	0.00050	0.01250	0	99.9	85	115			
Selenium	0.023	0.0010	0.02500	0	93.7	85	115			

Sample ID	**MSLLLCS-25486**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**
Client ID:	**BatchQC**	Batch ID: **25486**	RunNo: **34477**
Prep Date:	**5/24/2016**	Analysis Date: **5/25/2016**	SeqNo: **1063240** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00078	0.0010	0.001000	0	78.0	50	150			J
Arsenic	0.00086	0.0010	0.001000	0	86.2	50	150			J
Lead	0.00055	0.00050	0.0005000	0	110	50	150			
Selenium	0.00090	0.0010	0.001000	0	90.1	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	100	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.1	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061599** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	100	50	150			
Arsenic	0.00097	0.0010	0.001000	0	96.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00097	0.0010	0.001000	0	97.1	50	150			J

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C34426**	RunNo: **34426**
Prep Date:	Analysis Date: **5/23/2016**	SeqNo: **1061601** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25512**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**25512**	RunNo:	**34519**					
Prep Date:	**5/25/2016**	Analysis Date:	**5/26/2016**	SeqNo:	**1064697**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000076	0.00020								J

Sample ID	**LCS-25512**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**25512**	RunNo:	**34519**					
Prep Date:	**5/25/2016**	Analysis Date:	**5/26/2016**	SeqNo:	**1064698**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R34434**	RunNo:	**34434**					
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1061743**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID	**LCSb**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R34434**	RunNo:	**34434**					
Prep Date:		Analysis Date:	**5/23/2016**	SeqNo:	**1061747**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Sulfate	9.9	0.50	10.00	0	98.5	90	110			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R34487**	RunNo:	**34487**					
Prep Date:		Analysis Date:	**5/25/2016**	SeqNo:	**1063631**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R34487**	RunNo:	**34487**					
Prep Date:		Analysis Date:	**5/25/2016**	SeqNo:	**1063632**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	98.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-25494**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range**					
Client ID:	**PBW**	Batch ID:	**25494**	RunNo:	**34483**					
Prep Date:	**5/25/2016**	Analysis Date:	**5/25/2016**	SeqNo:	**1063745**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.98		1.000		97.7	70	141			

Sample ID	**LCS-25494**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range**					
Client ID:	**LCSW**	Batch ID:	**25494**	RunNo:	**34489**					
Prep Date:	**5/25/2016**	Analysis Date:	**5/26/2016**	SeqNo:	**1064130**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	111	71.3	139			
Surr: DNOP	0.50		0.5000		101	70	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064513** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064513** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	0.45	3.0								J
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064514** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25437**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **25437**	RunNo: **34450**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1062341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	6.7	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	3.8	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	4.8	10								J
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-25437**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **25437**	RunNo: **34450**
Prep Date: **5/23/2016**	Analysis Date: **5/24/2016**	SeqNo: **1062341** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		57.6	15	123			
Surr: Phenol-d5	87		200.0		43.6	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		79.7	18.4	134			
Surr: Nitrobenzene-d5	75		100.0		74.9	28.8	134			
Surr: 2-Fluorobiphenyl	71		100.0		71.3	35.9	125			
Surr: 4-Terphenyl-d14	65		100.0		65.5	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcs-25437**	SampType:	**LCS**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**LCSW**	Batch ID:	**25437**	RunNo:	**34450**
Prep Date:	**5/23/2016**	Analysis Date:	**5/24/2016**	SeqNo:	**1062342** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	84	10	100.0	0	83.7	35	113			
4-Chloro-3-methylphenol	130	10	200.0	0	66.0	40.7	114			
2-Chlorophenol	130	10	200.0	0	64.4	37.6	113			
1,4-Dichlorobenzene	69	10	100.0	0	68.7	37.7	106			
2,4-Dinitrotoluene	70	10	100.0	0	70.1	37	91			
N-Nitrosodi-n-propylamine	74	10	100.0	0	74.5	45.4	105			
4-Nitrophenol	73	10	200.0	0	36.4	33.4	104			
Pentachlorophenol	120	20	200.0	0	58.0	29.5	94.9			
Phenol	77	10	200.0	0	38.4	30.6	119			
Pyrene	82	10	100.0	0	82.0	26.2	120			
1,2,4-Trichlorobenzene	82	10	100.0	0	81.6	39.9	125			
Surr: 2-Fluorophenol	95		200.0		47.6	15	123			
Surr: Phenol-d5	75		200.0		37.5	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.3	18.4	134			
Surr: Nitrobenzene-d5	68		100.0		68.2	28.8	134			
Surr: 2-Fluorobiphenyl	70		100.0		70.0	35.9	125			
Surr: 4-Terphenyl-d14	61		100.0		61.5	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1605998**

30-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **C34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064532** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.7		10.00		96.9	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **C34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064533** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	75.4	118			
Surr: BFB	10		10.00		101	70	130			

Sample ID **1605998-001B MS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-20-GW**	Batch ID: **C34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064538** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	0.50	5.000	25.03	72.5	53.8	128			
Surr: BFB	97		100.0		97.1	70	130			

Sample ID **1605998-001B MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-20-GW**	Batch ID: **C34513**	RunNo: **34513**
Prep Date:	Analysis Date: **5/26/2016**	SeqNo: **1064539** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	0.50	5.000	25.03	78.6	53.8	128	1.05	20	
Surr: BFB	98		100.0		98.4	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1605998 RcptNo: 1

Received by/date: AF 05/20/16

Logged By: **Lindsay Mangin** 5/20/2016 3:00:00 PM

Completed By: **Lindsay Mangin** 5/20/2016 3:34:27 PM

Reviewed By: 05/23/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☑	
9. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
	See Remarks AG 05/23/16		
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2,1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? DO yes
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: AF

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks: For Metals analysis, added 1mL HNO3 to ~pH<2 for acceptable pH, held for 24hrs prior to analysis. AG 05/23/16

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301

Phone #: 505-722-0231

email or Fax#: ED.RIEGE@WNR.COM

QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: SWMU 10

Project #:

Project Manager: ED RIEGE

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1605998	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1) DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR 6		Air Bubbles (Y or N)
5-20-16	1045	WATER	SWMU 10-20-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				50 ML PLASTIC-1	$NH_4 2SO_4$	-001														✓		
				500 ML PLASTIC-1	NaOH	-001							✓									
	—	↓	TRIP BLANK	40 ML VOA-4	HCL	-002										✓						
	1045	WATER	SWMU 10-20-GW	500 ML PLASTIC-1	NEAT	-003													✓			
	0936	WATER	SWMU 10-21-GW	40 ML VOA-6	HCL	-004 X 3			✓							✓	-					
↓	↓	↓	↓	1 LITER AMBER-1	NEAT	-004 X 3			✓	TP						✓	TP ✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5-20-16	1115			5/20/16	1200
5/20/16	300			5/21/16	1500

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - NORTH DRAINAGE DITCH

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

AND WATER QA/QC SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

Appendix E

Quality Assurance/Quality Control Review

DATA VALIDATION INTRODUCTION

This summary presents data verification results for soil and groundwater samples collected from soil boring and monitoring wells installed at SWMU10 at the Gallup Refinery. The data review was performed in accordance with Provision IV.J.3.b (Review of Field and Laboratory QA/QC Data) of the RCRA Permit issued by NMED in October 2013, USEPA Functional Guidelines for Organic and Inorganic Data Review, and quality assurance and control parameters set by the project laboratory Hall Environmental Analysis Laboratory, Inc.

A total of 73 soil samples and 11 groundwater samples (excluding QA samples) were collected from April 28, 2015 through September 21, 2016 in accordance with the SWMU 10 Investigation Work Plan (Western Refining Southwest, Inc., 2014). Soil and groundwater samples were submitted to Hall Environmental Analysis Laboratory for the following parameters in accordance with the approved Work Plan:

- volatile organic compounds (VOCs) by USEPA Method 8260B;
- semi-volatile organic compounds (SVOCs) by USEPA Method 8270;
- Gasoline, diesel, and motor oil range organics by SW-846 Method 8015B;
- Total recoverable and dissolved metals (Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, nickel, selenium, silver, vanadium, and zinc) by SW846 Method 6010/6020;
- Chromium VI by SW-846 method 3060A;
- Tetraethyl lead by SW-846 method 3546;
- Cyanide by SW-846 method 9012; and
- Mercury by EPA Method 7470.

The groundwater samples were analyzed for water quality parameters including, sulfate, chloride, and fluoride.

Additionally, 29 quality assurance samples consisting of trip blanks, field blanks, equipment rinsate blanks, and field duplicates were collected and analyzed as part of the investigation activities. Table A-1 presents a summary of the field sample identifications, laboratory sample identifications, and sample collection dates.

QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level II data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample Preservation and Temperature Upon Laboratory Receipt
- Holding Times;
- Blank Contamination (method blanks, trip blanks, field blanks, and equipment rinsate blanks);
- Surrogate Recovery (for organic parameters);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD);
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD;
- Duplicates (field duplicate, laboratory duplicate); and
- Other Applicable QC Parameters.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

J+	The analyte was positively identified; however, the result should be considered an estimated value with a potential high bias.
J-	The analyte was positively identified; however, the result should be considered an estimated value with a potential low bias.
UJ	The reporting limit for a constituent that was not detected is considered an estimated value.
R	Quality control indicates that the data is not usable.

Results qualified as "J+", "J-", or "UJ" are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

Results for the performance monitoring events that required qualification based on the data verification are summarized in Table A-2.

CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact by Hall Environmental Laboratories, Inc. Samples were received by the laboratory at a temperature of 6.0 degrees Celsius or lower. Data qualification on lower temperature samples was not required. The hexavalent chromium field sample SWMU 10-12-GW was received at a pH of 7.5 rather than the range of 8 to 10 units. The field sample was not qualified. The sample bottle for the total metals analyses for sample SWMU 10-20-GW was apparently received with a pH outside the desired range, thus the lab added one milliliter of HNO3 and held the sample for 24 hours prior to analysis to ensure no metals had precipitated in the sample. The associated sample results are not qualified.

HOLDING TIMES

All samples were extracted and analyzed within method-specified holding time limits with the exception of the following:

- Lab Report 1505618 - Sample SWMU 10 EB06 was extracted 2 days after the 7 day holding time. This affected only the Method 8270C semi volatile analyses and only one sample. Since results may be biased low, the sample non-detect results were qualified "UJ".

See Table A-2 for qualified data.

BLANK CONTAMINATION

Method Blank

Method blanks were analyzed at the appropriate frequency. Target compounds were not detected in the method blanks, with the exception of the following:

- 1,2,4-Trimethylbenzene, acetone, 2-butanone (MEK), chloromethane, and 1,1-dichloroethane were detected in the blank for batch 19008. Acetone, 2-butanone, chloromethane, and 1,1-dichloroethane were not detected in the associated samples and qualification was not required. 1,2,4-Trimethylbenzene was detected at concentrations

greater than 5x blank in associated samples; and qualification of the field samples was not necessary.

- Zinc was detected in the method blank for batch 19025. Zinc was detected at similar concentrations in associated sample SWMU 10-3-GW; and the field sample was qualified with a" J+".
- Toluene and 2-butanone were detected in the blank for batch 19032. Toluene was detected in 2 associated samples and 2-butanone was detected in 10 associated samples at similar concentrations; and the field samples were qualified with a" J+".
- Lead, iron and zinc were detected in the method blank for batch for 19080. Lead, iron and zinc were detected in associated samples at concentrations greater than 5x the concentrations in the blank; and qualification of field samples was not necessary;
- Lead and iron were detected in the method blank for batch 19081. Lead and iron were detected in associated samples. The concentration for lead in one sample SWMU 10-8 (18-20') was less than 5x the concentration in the blank and this sample was qualified "J+". The results for remaining associated samples were greater than 5x the blank and qualification was not necessary.
- Cadmium and iron were detected in the method blank for batch 19082. Cadmium was not detected in associated samples. Iron was detected in associated samples but the concentrations were greater than 5x the blank and qualification of field samples was not necessary.
- 2-Butanone and toluene were detected in the method blank for batch 19107. 2-Butanone was detected in six associated samples at similar concentrations; and the field samples were qualified "J+". Toluene was detected in associated samples at concentrations greater than 5x the blank and qualification of the field samples was not necessary.
- 2-Butanone was detected in the blank for batch 19243. 2-Butanone was detected in three associated samples SWMU 10-16 (2-4'), SWMU 10-16 (4.5-5') and SWMU 10-16 (8-9") at similar concentrations; and the field samples were qualified "J+".
- Iron and silver were detected in the method blank for batch 19259. Silver was not detected in associated samples. Iron was detected in associated samples but the concentrations were greater than 5x the blank; and field samples were not qualified.
- Iron was detected in the blank for batch 19279. Iron was detected in associated samples but the concentrations were greater than 5x the blank and field samples were not qualified.
- Iron was detected in the blank for batch 19280. Iron was detected in associated samples but the concentrations were greater than 5x the blank and field samples were not qualified.

- Iron was detected in the blank for batch 19333. Iron was detected in associated samples but the concentrations were greater than 5x the blank and field samples were not qualified.
- Mercury was detected in the blank for batch 19401. Mercury was also detected in the equipment blank EB06 and in an associated sample SWMU 10-11-GW at similar concentrations. The field samples were qualified "J+".
- Beryllium was detected in the method blank for batch R26030. Beryllium was detected in three associated samples SWMU 10-1-GW, SWMU 10-3-GW and SWMU 10-5-GW at similar concentrations. The field samples were qualified "J+".
- 2-Butanone, chloroethane, and chloromethane were detected in the method blank for batch R26144. 2-Butanone, chloroethane, and chloromethane were not detected in associated samples and qualification of field samples is not necessary.
- 1,2,4- Trimethylbenzene, 2-butanone, and toluene were detected in the method blank for batch R25982. 1,2,4- Trimethylbenzene was detected in associated samples SWMU 10-1 (2-4') and SWMU 10-8 (4-6') at a similar concentration and the field samples were flagged "J+". 2-Butanone was not detected and toluene was detected in associated samples but concentrations were 5x the blank; and qualification of field samples is not necessary.
- 1,2,4-Trimethylbenzene, 1,2-dichloroethane, bromomethane, and chloroethane were detected in the blank for batch R26221. 1,2,4-Trimethylbenzene was detected in associated samples but concentrations were 5x the blank; and bromomethane, chloroethane, and 1,2-Dichloroethane were not detected in associated samples. Qualification of field samples was not necessary.
- Silver was detected in the method blank for analytical batch R25881. Silver was not detected in the associated sample and qualification was not required.
- Bromomethane and 1,2,4-trimethylbenzene were detected in the method blank for batch R26209; Bromomethane was detected in associated samples SWMU 10-11 (8-10"), SWMU 10-13 (6-8') and SWMU 10-14 (6-8') at similar concentrations; and field samples were flagged "J+". 1,2,4-Trimethylbenzene was detected in associated samples but concentrations were 5x the blank; and qualification of field samples was not necessary.
- Barium was detected in the blank for batch R26242. Barium was detected in associated samples but concentrations were 5x the blank; and qualification of field samples is not necessary.
- Silver was detected in the blank for batch R26291. Silver was not detected in associated samples; and qualification of field samples was not necessary.

- 1,2,4-Trimethylbenzene, 1,2-dichlorethane, and vinyl chloride were detected in the blank for batch R26332. 1,2,4-Trimethylbenzene was detected in associated samples SWMU 10-12-GW, SWMU 10-14-GW, SWMU 10-16-GW and two Trip Blanks at similar concentrations; and field samples were flagged "J+". 1,2-Dichlorethane and vinyl chloride were detected in associated sample SWMU 10-16-GW at similar concentrations and field samples were flagged "J+".
- Bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, and 4,6-dinitro-2-methylphenol were detected in the method blank for batch 25469 but many sample results were non-detect and are not qualified. Samples SWMU 10-18 (2-2.5' and 8-10') had detections of di-n-butyl phthalate at concentrations close to that detected in the method blank and are both flagged as "J+". Samples SWMU 10-21 (2-2.5', 12-14', and 20-22') and SWMU 10-22 (2-2.5' and 8-9') were flagged as J+ for bis(2-ethylhexyl)phthalate. Samples SWMU 10-21 (12-14') and SWMU 10-22 (2-2.5' and 8-9') were flagged as J+ for di-n-butyl phthalate.
- Mercury was detected in the method blank for sample batch 25448 and associated samples SWMU 10-18 (2-2.5', 8-10', and 18-20'), SWMU 10-19 (2-2.5', 12-14' and 18-20'), and SWMU 10-20 (2-2.5', 8-10', 10-12', 16-18', and 20-22') are all qualified as J+.
- Manganese was detected in the method blank for sample batch 25447 and associated samples SWMU 10-18 (2-2.5', 8-10', and 18-20') are all qualified as J+.
- 1-Methlynaphthalene and methylene chloride were both detected in the method blank for batch D34413. Associated samples SWMU 10-19 (12-14' and 18-20') and SWMU 10-20 (8-10', 10-12', and 16-18') all flagged as J+ for 1-methlynaphthalene, while only samples SWMU 10-19 (12-14') and SWMU 10-20 (8-10' and 10-12') are flagged as J+ for methylene chloride.
- Cyanide, mercury and methylene chloride were detected in the method blanks for batches WG876094, 25512, and A34513, respectively and the associated results in sample SWMU 10-20-GW are flagged as J+.
- Toluene and bromomethane were detected in the method blank for batch S37464 and associated sample SWMU 10-24 (6-8') is flagged as J+.
- 1,2,4-Trimethylbenzene was detected in the method blank for batch S37484 and sample SWMU 10-25 (2-2.5') is flagged as J+.
- 1-Methlynaphthalene was detected in method blank for batch S37484 and samples SWMU 10-23 (15-16'), SWMU 10-24 (15-16'), and SWMU 10-25 (2-2.5') were flagged as J+.
- Bis(2-ethylhexyl)phthalate and di-n-butyl phthalate were both detected in the method blank for batch W37464 and associated samples SWMU 10-23 (2-2.5' and 15-16'), SWMU 10-24

(2-2.5', 8-10', and 15-16'), and SWMU 10-25 (2-2.5', 10-12', and 16.8-18') are flagged as J+.

- Manganese and zinc were detected in the method blank for batch 27709 and associated samples SWMU 10-23 (2-2.5' and 15-16'), SWMU 10-24 (2-2.5', 6-8', 8-10', and 15-16'), and SWMU 10-25 (2-2.5', 10-12', and 16.8-18') are flagged as J+.
- Manganese was detected in the method blank for batch 27858 and associated samples SWMU 10-25-GW is flagged as J+. In addition, bis(2-ethylhexyl)phthalate was detected in the batch (27668) that is associated with SWMU 10-25-GW and the result is flagged as J+.

See Table A-2 for qualified data.

Trip Blank

Trip blanks were analyzed at the appropriate frequency as specified in the Permit. Target compounds were not detected in the trip blanks with the following exceptions:

Lab Report 1505698

- The VOCs ethylbenzene (0.11-J ug/L), naphthalene (0.31-J ug/L), 1-methylnaphthalene (0.71-J ug/L), 2-methylnaphthalene (1.1-J ug/L), 1,2,4-trimethylbenzene (0.29-J ug/L), and xylenes (0.041-J ug/L) were detected in TRIP Blank Sample No. 1501698-002a. The analytes were detected in the groundwater sample 1505698-001a associated with this trip blank at concentrations more than 5x the concentration detected in the blank. Sample results were not qualified; and

Lab Report 1505700

- The VOCs toluene (0.14-J ug/L) and 1,2,4-trimethylbenzene (0.18-J ug/L) were detected in TRIP Blank Sample No. 1505700-002a. Toluene was not detected and 1,2,4-trimethybenzene was detected in the groundwater sample 1505700-001a (SWMU 10-12-GW) associated with this trip blank. The detected concentration of 1,2,4-trimethylbenzene (0.66 ug/L) was less than 5 times the concentration in the trip blank and may be biased high. The 1,2,4-trimethylbenzene result for the field sample was flagged "J+".

See Table A-2 for qualified data.

Field Blanks/Equipment Rinsate Blank

Field and equipment rinsate blanks were collected as specified in the SWMU10 Investigation Work Plan and the Permit.

Common Laboratory Contaminants

Per USEPA guidelines, common laboratory contaminants for VOC analysis are acetone, 2-butanone (MEK), cyclohexane, chloromethane, and methylene chloride. Common laboratory contaminants for SVOC analysis include phthalates. Data qualification was not required for MEK in sample batches 19032, 19107, and 19243 where the laboratory contaminant was detected in the blank. Data qualification was required for other samples with methylene chloride and phthalates since there were detection in blanks and field analytical results were detected at concentrations less than 10 times the blank concentration in field samples. See Table A-2 for qualified data.

Methanol Blanks

Methanol Blanks provided by the laboratory were analyzed for VOCs. There were no analytes detected in the methanol blanks above the respective laboratory reporting limits.

SURROGATE RECOVERY

Surrogate recoveries for the organic and inorganic analyses were performed at the required frequency and were within laboratory acceptance limits, with the following exceptions:

Lab Report 1504C86

- Surrogate recovery for nitrobenzene-d6 was high and above the acceptance limit for field sample SWMU 10 EB01. The surrogate recovery for five of the six surrogates included in Method 8270C were within limits. Since only one surrogate was outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.

Lab Report 1505002

- Surrogate recovery for nitrobenzene-d6 was high and above the acceptance limit for field sample SWMU 10 EB02. The surrogate recovery for five of the six surrogates included in Method 8270C were within limits. Since only one surrogate was outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.

Lab Report 1505003

- Surrogate recovery for di-n-octyl phthalate (DNOP) was below the acceptance limit for field samples SWMU 10-5 (0-2') and SWMU 10-5 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 diesel range organics (DRO) or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field sample SWMU 10-5 (0-2'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505004

- Surrogate recovery for DNOP was below the lower acceptance limit for field sample SWMU 10-4 (2-4'). Low surrogate was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field sample SWMU 10 DUP01. Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505005

- Surrogate recovery for bromofluorobenzene (BFB) was high and above the upper acceptance limit for field sample SWMU 10-3-GW. The associated field sample results for Method 8015 gasoline range organics (GRO) are qualified J+ due to a potential high bias.

Lab Report 1505057

- Surrogate recovery for DNOP was below the lower acceptance limit for field sample SWMU 10-8 (2-4'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field samples SWMU 10-9 (4-6') and SWMU 10-8 (2-4'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505058

- Surrogate recovery for DNOP was below the lower acceptance limit for field sample SWMU 10-10 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field sample SWMU 10-10 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505218

- Surrogate recovery for BFB was high and above the upper acceptance limit for field sample SWMU 10-5-GW. The associated field sample results for Method 8015 GRO are qualified J+ due to a potential high bias. Non-detect results are not qualified.
- Surrogate recoveries for 2-fluorophenol and 2,4,6-tribromophenol were below the acceptance limit for field sample SWMU 10-5-GW. The surrogate recovery for three of the six surrogates included in Method 8270C were within limits. Since only two of six surrogates were outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.

Lab Report 1505570

- Surrogate recovery for DNOP was below the lower acceptance limit for field samples SWMU 10-14 (6-8') and SWMU 10-11 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix interference; therefore data qualification was not qualified.
- Surrogate recovery for DNOP was high and above the upper acceptance limit for field sample SWMU 10-11 (8-10'). The associated field sample results for Method 8015 GRO are qualified J+ due to a potential high bias. Non-detect results are not qualified.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field samples SWMU 10-9 (4-6') and SWMU 10-8 (2-4'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 15056174

- Surrogate recovery for DNOP was below the lower acceptance limit for field samples SWMU 10-13 (6-8'), SWMU 10-17 (6-8'), and SWMU 10 DUP04. Low surrogate recovery was due to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not qualified.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field samples SWMU 10-17 (6-8') and SWMU DUP04. Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505709

- Surrogate recovery for nitrobenzene d-5 was high and above the upper acceptance limit for field sample SWMU 10 DUP01GW. The surrogate recovery for five of the six surrogates included in Method 8270C were within limits. Since only one of six surrogates was outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.
- Surrogate recovery for dibromofluorobenzene was high and above the acceptance limit for field sample SWMU10 DUP01GW. The surrogate recovery for four of the five surrogates included in Method 8260 were within limits. Since only one of five surrogates was outside limits, the associated field sample results for volatile organic compounds were not qualified.

See Table A-2 for qualified data.

LCS RECOVERY AND RELATIVE PERCENT DIFFERENCE

Laboratory control samples (LCS0/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified "J+" to account for a potential high bias.

- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified ("UJ" for non-detects and "J-" for detected results) to account for a potential low bias.

LCS/LCSD percent recoveries and relative percent differences (RPDs) were within acceptance limits and no qualification was required.

MS/MSD RECOVERY AND RELATIVE PERCENT DIFFERENCE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified "J+" to account for a potential high bias.
- Low MS/MSD recoveries for organic or inorganic parameters result in sample qualification of the associated analytical batch with a "J-".
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

MS/MSD percent recoveries and RPDs were within acceptance limits except for the following:

Lab Report 1505003

- The MS/MSD recoveries for benzene and toluene for Method 8260B Batch 19032 were below the lower acceptance limits for field sample SWMU 10-5 (22-24). Low recovery was related to dilution or matrix interference. Since results may be biased low, detected results in the batch are qualified "J-"and non-detect results are qualified "UJ".

Lab Report 1505057

- The MS recovery of 127% and the MSD recovery of 172% for mercury was above the acceptance limit of 125% for Method 7471 batch 19445 and field sample SWMU 10-9 (2-4'). Since results may be biased high, the detected results are qualified "J+".

Lab Report 1505218

- The MS/MSD recovery of 166% for BFB is above the upper limit of 120% for Method 8015 GRO batch R26016 in field sample SWMU 10-5-GW. The associated field sample results for Method 8015 GRO are qualified J+ due to a potential high bias. Non-detect samples were not qualified.
- The MS/MSD recoveries were low and the relative percent difference (RPD) were outside the acceptance limits for several chemicals and surrogates for Method 8270C batch 19150 performed for field sample SWMU 10-5-GW. Low recovery was related to dilution or matrix interference. Since results may be biased low, the associated semi-volatile results were qualified "J-"if detected or "UJ" if non-detect.

Lab Report 1505570

- The MS/MSD recoveries for all compounds and surrogates for Method 8270C batch 19270 were within limits for field sample SWMU 10-14 (4-6'). The RPD of 30.4 for N-nitroso-n-propyl amine was above the limit of 27.5. Since the RPDs for other compounds were within limits, and the N-nitroso-n-propyl amine RPD was only slightly out of specifications, the field data were not qualified.
- The MS recovery of 33.2% and the MSD recovery of 33.3% for antimony was below the lower limit of 75% for Method 6010 batch 19259 and field sample SWMU 10-14 (6-8'). Low recovery was related to dilution or matrix interference. The associated field sample results for antimony are qualified "UJ" due to a potential low bias.
- The MS recovery for lead was within limits and MSD recovery of 74.4 for lead was below the acceptance limit of 75% for Method 6010 batch 19259 and field sample SWMU 10-14 (6-8'). Since MSD recovery was only slightly low, the associated field sample results were not qualified.

Lab Report 1505698

- MS recoveries for benzene (16.4%), toluene (13.4%), chlorobenzene (11.7%), 1,1-dichloroethylene (6.58%), and trichloroethylene (9.98%) were below the lower acceptance limit of 30% for Method 8260 batch R26322 and field sample SWMU 10-11-GW. The RPDs for these compounds were outside acceptance limits. Low recovery was related to dilution or matrix interference. The field sample results for volatile organics are qualified "J-"and non-detect results are qualified "UJ" due to a potential low bias.

Lab Report 1605874

- The MS and MSD recoveries for N-Nitrosodi-n-propylamine, 42.7% and 40.7, respectively, were below the lower limit of 43.5%. Antimony, cobalt, lead, manganese, nickel, and selenium had low MS recoveries of 29.8%, 69.2%, 67%, 74.6%, 72.6%, and 68.2%, respectively, vs the lower limit of 75%. Antimony, arsenic, beryllium, cadmium, cobalt, lead, manganese, nickel, and selenium had low MSD recoveries of 27.2%, 71.4%, 73.6%, 74.6%, 66.6%, 63.9%, 74.4%, 71.7%, and 66.2%, respectively, vs the lower limit of 75% .Low recovery was related to dilution or matrix interference. The field sample results with low recovery are qualified "J-"and non-detect results are qualified "UJ" due to a potential low bias. Barium had both MS and MSD recoveries (133.9% and 133.9%) above the upper limit of 125% and the results are flagged as J+.

Lab Report 160875

- Antimony, cobalt, lead, manganese, nickel, and selenium had low MS recoveries of 29.8%, 69.2%, 67%, 74.6%, 72.6%, and 68.2%, respectively, vs the lower limit of 75%. Antimony, arsenic, beryllium, cadmium, cobalt, lead, manganese, nickel, and selenium had low MSD recoveries of 27.2%, 71.4%, 73.6%, 74.6%, 66.6%, 63.9%, 74.4%, 71.7%, and 66.2%, respectively, vs the lower limit of 75% .Low recovery was related to dilution or matrix interference. The field sample results with low recovery are qualified "J-"and non-detect results are qualified "UJ" due to a potential low bias. Barium had both MS and MSD recoveries (133.9% and 133.9%) above the upper limit of 125% and the results are flagged as J+.

Lab Report 1605943

- Cyanide had a low MS recovery of 70% vs. the lower limit of 80%. Cobalt, nickel, selenium, and zinc had low MSD recoveries of 72.4%, 71.1%, 69.3%, and 70.7% vs. the lower limit of 75%. Antimony and lead had low recoveries for the MS (31.9% and 74.7%, respectively, vs. 75%) and MSD (16.9% and 71.1%, respectively, vs. 75%). The field sample results with low recovery are qualified "J-"and non-detect results are qualified "UJ" due to a potential low bias.

Lab Report 1605998

- Cyanide had a low MSD recovery of 89% vs. the lower limit of 90%. The field sample result with low recovery is qualified "J-"due to a potential low bias.

Lab Report 1609B57

- Antimony, arsenic, lead, manganese, nickel, selenium, and zinc had low MS recoveries of 48.0%, 70.9%, 72.9%, -407%, 73%, 60.5, and 74.9%, respectively, vs. a lower limit of 75%. Antimony, manganese, and selenium had low MSD recoveries of 48.1%, -195%, and 59.2%, respectively, vs. a lower limit of 75%. The field sample results with low recovery are qualified "J-"and non-detect results are qualified "UJ" due to a potential low bias. Barium had a MSD recovery of 295%, above the upper limit of 125% and the results are flagged as J+.

Lab Report 1609C66

- 4-Nitrophenol had a low MSD recovery of 9.01% vs the lower limit of 15% and a RPD of 58.3% vs. a limit of 41.5%. The field sample result was non-detect and the result is qualified "UJ" due to a potential low bias.

See Table A-2 for qualified data.

DUPLICATES

Field Duplicates

Field duplicates were collected at a rate as stated in the approved SWMU10 Investigation Work Plan. The RPDs between the field duplicate and its associated sample were calculated and are presented in Table A-3. The field duplicates were evaluated by the following criteria:

- If an analyte was detected at a concentration greater than five times the method reporting limit, the RPD should be less than 35 percent for soil and 25 percent for ground water samples.
- If an analyte was detected at a concentration that is less than five times the method reporting limit, then the difference between the sample and the field duplicate should not exceed the method reporting limit.
- Duplicate RPDs are calculated by dividing the difference of the concentrations by the average of the concentrations.

Field duplicate RPDs were within acceptance limits except for the following soil sample:

- GRO and DRO for field sample SWMU 10-9 (4-6);
- 1,2,4-Trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, n-butylbenzene, n-propylbenzene, sec-butylbenzene, and xylene(s) for field sample SWMU10-9 (4-6');
- 1-methylnaphthalene and 2-methylnaphthalene for field sample SWMU10-25 (2-2.5'); and
- Iron and zinc in field sample SWMU 10-15-GW.

See Table 3A for a field duplicate summary.

OTHER APPLICABLE QC PARAMETERS

Detection Limits

Several samples [e.g., SWMU 10-17 (6-8') Motor Oil Range Organics reported as <4,776 mg/kg] had elevated reporting limits due to required sample dilutions that resulted in reporting limits above the applicable screen levels. This is not a data exception in regards to laboratory performance; however, such results cannot be used to determine if there is an exceedance of the screening level.

Completeness Summary

The following equation was used to calculate the technical completeness:

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}}\right) \times 100$$

The technical completeness attained for SWMU10 RCRA Investigation activities was 100 percent. The completeness results are provided in Table A-4. The analytical results for the required analytes per the approved SWMU10 Work Plan were considered usable for the intended purposes and the project DQOs have been met.

Table A-1
Sample Identification
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Lab ID	Date Collected	Sample Type
SWMU 10 EB01	1504c86-001a	4/28/2015	EB
SWMU 10-1 (2-4')	1504c87-001a	4/28/2015	N
SWMU 10-1 (4-6')	1504c87-002a	4/28/2015	N
SWMU 10-1 (18-20')	1504c87-003a	4/28/2015	N
SWMU 10-3 (2-4')	1504c87-004a	4/28/2015	N
SWMU 10-3 (6-8')	1504c87-005a	4/28/2015	N
SWMU 10-3 (18-20')	1504c87-006a	4/28/2015	N
SWMU 10-1-GW	1505001-001a	4/28/2015	GW
Trip Blank	1505001-002a	NA	TB
SWMU 10 EB02	1505002-001a	4/29/2015	EB
SWMU 10-5 (0-2')	1505003-001a	4/29/2015	N
SWMU 10-5 (2-4')	1505003-002a	4/29/2015	N
SWMU 10-5 (4-6')	1505003-003a	4/29/2015	N
SWMU 10-5 (14-16')	1505003-004a	4/29/2015	N
SWMU 10-5 (22-24')	1505003-005A	4/29/2015	N
SWMU 10-4 (0-2')	1505004-001A	4/29/2015	N
SWMU 10-4 (2-4')	1505004-002a	4/29/2015	N
SWMU 10-4 (6-8')	1505004-003A	4/29/2015	N
SWMU 10-4 (18-20')	1505004-004A	4/29/2015	N
SWMU 10 DUP01	1505004-005A	4/29/2015	FD
SWMU 10-3-GW	1505005-001a	4/29/2015	GW
Trip Blank	1505005-002a	NA	TB
SWMU 10 EB04	1505047-001a	5/1/2015	EB
SWMU 10 EB03	1505048-001a	4/30/2015	EB
SWMU 10-9 (2-4')	1505057-001A	4/30/2015	N
SWMU 10-9 (4-6')	1505057-002a	4/30/2015	N
SWMU 10-9 (18-20')	1505057-003A	4/30/2015	N
SWMU 10-9DUP02	1505057-004a	4/30/2015	FD
SWMU 10-8 (2-4')	1505057-005a	4/30/2015	N
SWMU 10-8 (4-6')	1505057-006a	4/30/2015	N
SWMU 10-8 (18-20')	1505057-007A	4/30/2015	N
SWMU 10-10 (2-4')	1505058-001A	4/30/2015	N
SWMU 10-10 (4-6')	1505058-002a	4/30/2015	N
SWMU 10-10 (18-20')	1505058-003A	4/30/2015	N
SWMU 10-7 (2-4')	1505059-001A	5/1/2015	N
SWMU 10-7 (4-6')	1505059-002A	5/1/2015	N
SWMU 10-7 (18-20')	1505059-003A	5/1/2015	N
SWMU 10-5-GW	1505218-001a	5/4/2015	GW
TRIP BLANK	1505218-002a	NA	TB
SWMU 10 EB05	1505222-001a	5/4/2015	EB
TRIP BLANK	1505222-002a	NA	TB
SWMU 10-6 (2-4')	1505223-001A	5/4/2015	N
SWMU 10-6 (10-12')	1505223-002A	5/4/2015	N
SWMU 10-2 (0-2')	1505223-003A	5/4/2015	N
SWMU 10-2 (2-4')	1505223-004A	5/4/2015	N
SWMU 10 DUP03	1505223-005A	5/4/2015	FD
MEOH BLANK	1505223-006	5/4/2015	FB
SWMU 10-14 (6-8')	1505570-001a	5/12/2015	N
SWMU 10-14 (21-23')	1505570-002a	5/12/2015	N
SWMU 10-11 (4-6')	1505570-003a	5/12/2015	N
SWMU 10-11 (8-10')	1505570-004a	5/12/2015	N
SWMU 10-11 (18-20')	1505570-005A	5/12/2015	N
SWMU 10-12 (6-8')	1505617-001a	5/12/2015	N

Table A-1
Sample Identification
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Lab ID	Date Collected	Sample Type
SWMU 10-12 (20-22')	1505617-002a	5/12/2015	N
SWMU 10-13 (2-4')	1505617-003a	5/13/2015	N
SWMU 10-13 (6-8')	1505617-004a	5/13/2015	N
SWMU 10-13 (18-20')	1505617-005a	5/13/2015	N
SWMU 10-15 (2-4')	1505617-006a	5/13/2015	N
SWMU 10-15 (4-6')	1505617-007a	5/13/2015	N
SWMU 10-15 (18-20')	1505617-008a	5/13/2015	N
SWMU 10-17 (6-8')	1505617-009a	5/13/2015	N
SWMU 10 DUP04	1505617-010a	5/13/2015	FD
MEOH BLANK	1505617-011	5/13/2015	FB
SWMU 10 EB06	1505618-001a	5/12/2015	EB
SWMU 10-11-GW	1505698-001a	5/14/2015	GW
Trip Blank	1505698-002a	NA	TB
SWMU 10-12-GW	1505700-001a	5/14/2015	GW
Trip Blank	1505700-002a	NA	TB
SWMU 10-14-GW	1505701-001a	5/14/2015	GW
Trip Blank	1505701-002a	NA	TB
SWMU 10-16 (2-4')	1505705-001a	5/13/2015	N
SWMU 10-16 (4-5.5')	1505705-002a	5/13/2015	N
SWMU 10-16 (8-9')	1505705-003a	5/13/2015	N
SWMU 10-15-GW	1505708-001a	5/14/2015	GW
TRIP BLANK	1505708-002a	NA	TB
SWMU 10 DUP01GW	1505709-001a	5/14/2015	FD
TRIP BLANK	1505709-002a	NA	TB
SWMU 10-16-GW	1505710-001a	5/14/2015	GW
SWMU 10-18 (2-2.5')	1605874-001	5/16/2016	N
SWMU 10-18 (8-10')	1605874-002	5/16/2016	N
SWMU 10-18 (18-20')	1605874-003	5/16/2016	N
SWMU 10-19 (2-2.5')	1605875-005	5/17/2016	N
SWMU 10-19 (12-14')	1605875-006	5/17/2016	N
SWMU 10-19 (18-20')	1605875-007	5/17/2016	N
SWMU 10-20 (2-2.5')	1605875-008	5/17/2016	N
SWMU 10-20 (8-10')	1605875-001	5/17/2016	N
SWMU 10-20 (10-12')	1605875-002	5/17/2016	N
SWMU 10-20 (16-18')	1605875-003	5/17/2016	N
SWMU 10-20 (20-22')	1605875-004	5/17/2016	N
SWMU 10-21 (2-2.5')	1605943-001	5/18/2016	N
SWMU 10-21 (12-14')	1605943-002	5/18/2016	N
SWMU 10-21 (20-22')	1605943-003	5/18/2016	N
SWMU 10-22 (2-2.5')	1605943-004	5/18/2016	N
SWMU 10-22 (8-9')	1605943-005	5/18/2016	N
DUP01	1605943-006	5/18/2016	FD
MeOH BLANK	1605943-007	NA	MB
SWMU 10-23 (2-2.5')	1609B57-001	9/19/2016	N
SWMU 10-23 (15-16')	1609B57-002	9/19/2016	N
SWMU 10-24 (2-2.5')	1609B57-003	9/19/2016	N
SWMU 10-24 (6-8')	1609B57-004	9/19/2016	N
SWMU 10-24 (8-10')	1609B57-005	9/19/2016	N
SWMU 10-24 (15-16')	1609B57-006	9/19/2016	N
SWMU 10-25 (2-2.5')	1609B57-007	9/19/2016	N
SWMU 10-25 (10-12')	1609B57-008	9/19/2016	N
SWMU 10-25 (16.5-18')	1609B57-009	9/19/2016	N
SWMU 10 DUP01	1609B57-010	9/19/2016	FD

Table A-1
Sample Identification
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Lab ID	Date Collected	Sample Type
MeOH BLANK	1609B57-011	NA	MB
EB091916	1609B57-012	9/19/2016	EB
SWMU 10-20-GW	1605998-001	5/20/2016	GW
Trip Blank	1605998-002	NA	TB
SWMU 10-21-GW	1605998-003	5/20/2016	GW
SWMU 10-25-GW	1609C66-001	9/21/2016	GW
Trip Blank	1609C66-002	NA	TB

Notes:

N = Normal field sample
FD = Field duplicate
FB = Field Blank
NA = Not Applicable
TB = Trip Blank
EB = Equipment Blank
GW = Groundwater
MB = Methanol Blank

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01	4/29/2015	1,3,5-Trimethylbenzene	0.000422	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Methylene chloride	0.00051	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	sec-Butylbenzene	0.000534	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Ethylbenzene	0.000638	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2-Hexanone	0.000653	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,4-Trimethylbenzene	0.000972	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Benzene	0.00104	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Xylenes, Total	0.00171	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Toluene	0.00232	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Acetone	0.0166	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Barium	380	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP01	4/29/2015	2-Butanone	0.00253	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01GW	5/14/2015	Benzene	0.4	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Butanone	2.9	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Acetone	16	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Methyl tert-butyl ether (MTBE)	150	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP04	5/13/2015	Fluorene	3.2	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	Phenanthrene	6	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	Naphthalene	8.8	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	2,4-Dimethylphenol	18	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	Phenol	26	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	1-Methylnaphthalene	28	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	2-Methylphenol	29	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	2-Methylnaphthalene	45	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	3+4-Methylphenol	60	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 EB05	5/4/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4,5-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4,6-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dimethylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dinitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,6-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Chloronaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Chlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	3,3´-Dichlorobenzidine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	3+4-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	3-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4,6-Dinitro-2-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Bromophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Chloro-3-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB05	5/4/2015	4-Chloroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Chlorophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Acenaphthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Acenaphthylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Aniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Azobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benz(a)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(a)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(b)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(g,h,i)perylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(k)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzoic acid	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzyl alcohol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-chloroethoxy)methane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-chloroethyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-chloroisopropyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-ethylhexyl)phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Butyl benzyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Carbazole	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Chrysene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Dibenz(a,h)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Dibenzofuran	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Diethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Dimethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Di-n-butyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Di-n-octyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Fluorene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachlorocyclopentadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachloroethane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Indeno(1,2,3-cd)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Isophorone	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Naphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Nitrobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	N-Nitrosodi-n-propylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	N-Nitrosodiphenylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB05	5/4/2015	Phenanthrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Phenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Pyridine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	N-Nitrosodimethylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Pentachlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB06	5/12/2015	Mercury	0.00015	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10 EB06	5/12/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4,5-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4,6-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dichlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dimethylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dinitrophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,6-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Chloronaphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Chlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	3,3´-Dichlorobenzidine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	3+4-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	3-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4,6-Dinitro-2-methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Bromophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Chloro-3-methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Chloroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Chlorophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Acenaphthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Acenaphthylene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Aniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Anthracene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Azobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB06	5/12/2015	Benz(a)anthracene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(a)pyrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(b)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(g,h,i)perylene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(k)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzoic acid	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzyl alcohol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-chloroethoxy)methane	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-chloroethyl)ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-chloroisopropyl)ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-ethylhexyl)phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Butyl benzyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Carbazole	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Chrysene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Dibenz(a,h)anthracene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Dibenzofuran	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Diethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Dimethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Di-n-butyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Di-n-octyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Fluoranthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Fluorene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachlorocyclopentadiene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachloroethane	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Indeno(1,2,3-cd)pyrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Isophorone	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Naphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Nitrobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	N-Nitrosodimethylamine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	N-Nitrosodi-n-propylamine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	N-Nitrosodiphenylamine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Pentachlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Phenanthrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Phenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Pyrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Pyridine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10-1 (18-20')	4/28/2015	Methylene chloride	0.000566	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	sec-Butylbenzene	0.000715	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3,5-Trimethylbenzene	0.000993	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (18-20')	4/28/2015	1,2,4-Trimethylbenzene	0.00162	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Ethylbenzene	0.00192	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Acetone	0.00324	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Xylenes, Total	0.00647	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Toluene	0.00836	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Benzene	0.0146	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Butanone	0.00156	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (18-20')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3,5-Trimethylbenzene	0.000993	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (2-4')	4/28/2015	1,2,4-Trimethylbenzene	0.0061	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-1 (4-6')	4/28/2015	1,3,5-Trimethylbenzene	0.000318	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	sec-Butylbenzene	0.000593	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,4-Trimethylbenzene	0.000619	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Methylene chloride	0.000619	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Naphthalene	0.000877	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Benzene	0.00211	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Toluene	0.00253	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Methyl tert-butyl ether (MTBE)	0.00669	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Acetone	0.00926	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Ethylbenzene	0.0318	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Xylenes, Total	0.197	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Butanone	0.00257	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (4-6')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (4-6')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	n-Propylbenzene	0.000372	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	sec-Butylbenzene	0.000688	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Naphthalene	0.000725	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,3,5-Trimethylbenzene	0.00151	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,4-Trimethylbenzene	0.00238	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Ethylbenzene	0.00241	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Acetone	0.00422	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Toluene	0.0104	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Benzene	0.018	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Butanone	0.00159	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-10 (18-20')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Methylene chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Hexanone	0.000582	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Acetone	0.00792	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Toluene	0.000255	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Butanone	0.00161	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Methylene chloride	0.00051	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-10 (2-4')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,4-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,3,5-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Benzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-10 (2-4')	4/30/2015	Ethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	sec-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Xylenes, Total	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (4-6')	4/30/2015	Fluorene	2.2	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	Phenanthrene	4.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	Naphthalene	5.9	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	1-Methylnaphthalene	17	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	2-Methylnaphthalene	25	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-11 (4-6')	5/12/2015	Mercury	0.05	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-11 (8-10')	5/12/2015	Bromomethane	0.026	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-11 (8-10')	5/12/2015	Mercury	0.014	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-11-GW	5/14/2015	1,1-Dichloroethane	0.93	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	sec-Butylbenzene	2.2	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Benzene	2.5	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	4-Isopropyltoluene	2.7	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	n-Butylbenzene	3.4	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Toluene	6	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Isopropylbenzene	8.5	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Acetone	8.8	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	n-Propylbenzene	11	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,3,5-Trimethylbenzene	22	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Ethylbenzene	40	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Naphthalene	45	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,4-Trimethylbenzene	64	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1-Methylnaphthalene	70	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Methylnaphthalene	98	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Xylenes, Total	230	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-11-GW	5/14/2015	Mercury	0.00075	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-11-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	14	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-11-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Benzene	0.47	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Naphthalene	0.52	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Methylnaphthalene	1.5	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Acetone	3.4	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	13	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,4-Trimethylbenzene	0.66	ug/l	Water	J+/J+/J-	Qualified high bias since detected in method blank & trip blank and field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-12-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-13 (6-8')	5/13/2015	Bromomethane	0.023	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-14 (21-23')	5/12/2015	Mercury	0.0032	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-14 (6-8')	5/12/2015	Bromomethane	0.023	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-14 (6-8')	5/12/2015	Mercury	0.0046	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-14 (6-8')	5/12/2015	Antimony	ND	mg/kg	Soil	UJ	Qualfied low since Method 6010 MS/SMSD recovery low
SWMU 10-14-GW	5/14/2015	Toluene	0.3	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Benzene	0.47	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-14-GW	5/14/2015	Acetone	2.7	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	16	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,4-Trimethylbenzene	0.44	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-14-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Benzene	0.51	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Butanone	2.9	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Acetone	9.7	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	150	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-15-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-15-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16 (2-4')	5/13/2015	2-Butanone	0.00304	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-16 (4-5.5')	5/13/2015	2-Butanone	0.00146	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-16 (8-9')	5/13/2015	2-Butanone	0.00173	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-16-GW	5/14/2015	Benzene	0.24	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Xylenes, Total	0.35	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	cis-1,2-DCE	0.39	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1-Dichloroethene	0.73	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Trichloroethene (TCE)	0.77	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Acetone	1.6	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1-Dichloroethane	3.1	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	19	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,4-Trimethylbenzene	0.18	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dichloroethane (EDC)	0.47	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Vinyl chloride	0.47	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-16-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-17 (6-8')	5/13/2015	Fluorene	7.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	Phenanthrene	15	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	Naphthalene	24	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	Phenol	52	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	2-Methylphenol	56	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-17 (6-8')	5/13/2015	1-Methylnaphthalene	76	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	3+4-Methylphenol	100	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	2-Methylnaphthalene	130	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-1-GW	4/29/2015	Beryllium	0.00052	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-2 (0-2')	5/4/2015	2-Butanone	0.0038	mg/kg	Unknown	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-2 (2-4')	5/4/2015	2-Butanone	0.00283	mg/kg	Unknown	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-3 (18-20')	4/28/2015	2-Hexanone	0.000748	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Methylene chloride	0.00077	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	sec-Butylbenzene	0.000781	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,3,5-Trimethylbenzene	0.00123	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Acetone	0.00158	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,4-Trimethylbenzene	0.00184	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Ethylbenzene	0.00231	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Xylenes, Total	0.00707	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Toluene	0.01	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Benzene	0.0141	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2-Butanone	0.00151	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (18-20')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Ethylbenzene	0.000313	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Methylene chloride	0.000387	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Hexanone	0.000656	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Benzene	0.000872	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Xylenes, Total	0.00108	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Toluene	0.00116	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Acetone	0.0201	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Butanone	0.00273	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (2-4')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,4-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,3,5-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (2-4')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	sec-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,3,5-Trimethylbenzene	0.000351	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Methylene chloride	0.000547	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	sec-Butylbenzene	0.000555	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,4-Trimethylbenzene	0.000564	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Hexanone	0.000588	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Ethylbenzene	0.0008	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Xylenes, Total	0.00181	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Toluene	0.00301	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Benzene	0.00319	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Acetone	0.00534	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Butanone	0.00136	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (6-8')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3-GW	4/29/2015	Gasoline Range Organics (GRO)	0.033	mg/l	Water	J+	Qualified high bias due to surrogate recovery

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3-GW	4/29/2015	Beryllium	0.0004	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-3-GW	4/29/2015	Zinc	0.023	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-4 (0-2')	4/29/2015	1,3,5-Trimethylbenzene	0.000347	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Methylene chloride	0.000606	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	sec-Butylbenzene	0.000645	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Ethylbenzene	0.000703	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,4-Trimethylbenzene	0.00077	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Hexanone	0.000886	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Benzene	0.00118	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Xylenes, Total	0.00182	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Toluene	0.00263	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Acetone	0.0237	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Butanone	0.00407	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-4 (0-2')	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Isopropylbenzene	0.000482	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	n-Propylbenzene	0.00051	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Methylene chloride	0.000612	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	sec-Butylbenzene	0.000714	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Naphthalene	0.000742	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Acetone	0.0018	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,3,5-Trimethylbenzene	0.00184	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,4-Trimethylbenzene	0.00277	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Ethylbenzene	0.00291	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Xylenes, Total	0.00975	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Toluene	0.0127	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Benzene	0.0204	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-4 (18-20')	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-4 (18-20')	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (6-8')	4/29/2015	2-Butanone	0.00153	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-5 (22-24')	4/29/2015	n-Propylbenzene	0.000469	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Methylene chloride	0.000565	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	sec-Butylbenzene	0.000766	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Naphthalene	0.000785	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1-Methylnaphthalene	0.000843	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Methylnaphthalene	0.000852	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,3,5-Trimethylbenzene	0.00179	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Acetone	0.00186	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Ethylbenzene	0.00258	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,4-Trimethylbenzene	0.00263	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Xylenes, Total	0.00849	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Toluene	0.0112	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Benzene	0.0179	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5 (22-24')	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5-GW	5/4/2015	Gasoline Range Organics (GRO)	0.21	mg/l	Water	J+/J+	Qualified high bias due to surrogate recovery and Method GRO MS/MSD
SWMU 10-5-GW	5/4/2015	Beryllium	0.00042	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-5-GW	5/4/2015	Bis(2-chloroethyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	N-Nitrosodimethylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Pentachlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5-GW	5/4/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4,5-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4,6-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dimethylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dinitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,6-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Chloronaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Chlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	3,3´-Dichlorobenzidine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	3+4-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	3-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4,6-Dinitro-2-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Bromophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Chloro-3-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Chloroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Chlorophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Acenaphthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Acenaphthylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Aniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Azobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benz(a)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(a)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(b)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(g,h,i)perylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(k)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzoic acid	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzyl alcohol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Bis(2-chloroethoxy)methane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Bis(2-chloroisopropyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Bis(2-ethylhexyl)phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5-GW	5/4/2015	Butyl benzyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Carbazole	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Chrysene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Dibenz(a,h)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Dibenzofuran	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Diethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Dimethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Di-n-butyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Di-n-octyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Fluorene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachlorocyclopentadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachloroethane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Indeno(1,2,3-cd)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Isophorone	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Naphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Nitrobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	N-Nitrosodi-n-propylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	N-Nitrosodiphenylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Phenanthrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Phenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Pyridine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-6 (2-4')	5/4/2015	2-Butanone	0.00176	mg/kg	Unknown	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-7 (2-4')	5/1/2015	2-Butanone	0.00273	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-7 (4-6')	5/1/2015	2-Butanone	0.00175	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-8 (18-20')	4/30/2015	n-Propylbenzene	0.000428	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Isopropylbenzene	0.000447	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	sec-Butylbenzene	0.000714	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Naphthalene	0.000809	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,3,5-Trimethylbenzene	0.00159	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,4-Trimethylbenzene	0.00236	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Ethylbenzene	0.00285	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Acetone	0.00466	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Xylenes, Total	0.00872	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Toluene	0.0122	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Benzene	0.0178	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Lead	0.27	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-8 (18-20')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-8 (18-20')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Methylene chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (2-4')	4/30/2015	Fluorene	8.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (2-4')	4/30/2015	Naphthalene	18	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (2-4')	4/30/2015	1-Methylnaphthalene	68	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (2-4')	4/30/2015	2-Methylnaphthalene	89	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (4-6')	4/30/2015	1,2,4-Trimethylbenzene	0.021	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is $\leq$ 5x blank concentration
SWMU 10-9 (18-20')	4/30/2015	sec-Butylbenzene	0.000849	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Naphthalene	0.000873	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,3,5-Trimethylbenzene	0.00151	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,4-Trimethylbenzene	0.00229	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Ethylbenzene	0.00242	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Acetone	0.00359	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Xylenes, Total	0.00807	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Toluene	0.0115	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Benzene	0.0159	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-9 (18-20')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Methylene chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-9 (18-20')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Methylene chloride	0.000438	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Benzene	0.000788	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Acetone	0.0184	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bis(2-ethylhexyl)phthalate	1.5	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-9 (2-4')	4/30/2015	Mercury	0.07	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-9 (2-4')	4/30/2015	Toluene	0.000797	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Butanone	0.00234	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,4-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,3,5-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-9 (2-4')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Ethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	sec-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Xylenes, Total	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (4-6')	4/30/2015	2-Methylnaphthalene	1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-9 (4-6')	4/30/2015	1-Methylnaphthalene	1.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
Trip Blank	5/14/2015	Ethylbenzene	0.11	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Naphthalene	0.31	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Xylenes, Total	0.41	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1-Methylnaphthalene	0.71	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Methylnaphthalene	1.1	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Toluene	0.14	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trimethylbenzene	0.29	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trimethylbenzene	0.18	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
TRIP BLANK	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
TRIP BLANK	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
TRIP BLANK	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-18 (2-2.5')	5/6/2016	Di-n-butyl phthalate	0.14	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-18 (8-10')	5/6/2016	Di-n-butyl phthalate	0.089	mg/kg	soil	J+	qualifed as non-detect due to presence in field sample below concentration in method blank
SWMU 10-18 (2-2.5')	5/6/2016	mercury	0.0044	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-18 (8-10')	5/6/2016	mercury	0.0052	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-18 (18-20')	5/6/2016	mercury	0.0011	mg/kg	soil	J+	qualified as non-detect due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-18 (2-2.5')	5/6/2016	manganese	200	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-18 (8-10')	5/6/2016	manganese	700	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-18 (18-20')	5/6/2016	manganese	690	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-18 (2-2.5')	5/6/2016	chromium VI	<0.64	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (8-10')	5/6/2016	chromium VI	<0.64	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (18-20')	5/6/2016	chromium VI	<0.64	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch

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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-18 (2-2.5')	5/6/2016	N-Nitrosodi-n-propylamine	< 0.1165	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (8-10')	5/6/2016	N-Nitrosodi-n-propylamine	< 0.1126	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (18-20')	5/6/2016	N-Nitrosodi-n-propylamine	< 0.1105	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (2-2.5')	5/6/2016	Antimony	2.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	Arsenic	1.8	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	Barium	130	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	Beryllium	1.1	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	Cadmium	< 0.0757	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (2-2.5')	5/6/2016	cobalt	4.7	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-18 (2-2.5')	5/6/2016	Lead	5.2	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	manganese	200	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	Nickel	8.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (2-2.5')	5/6/2016	Selenium	< 1.3042	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (8-10')	5/6/2016	Antimony	< 2.8	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (8-10')	5/6/2016	Arsenic	2.2	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-18 (8-10')	5/6/2016	Barium	170	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-18 (8-10')	5/6/2016	Beryllium	1.1	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-18 (8-10')	5/6/2016	Cadmium	< 0.15	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (8-10')	5/6/2016	cobalt	6.4	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-18 (8-10')	5/6/2016	Lead	4.9	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (8-10')	5/6/2016	manganese	700	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (8-10')	5/6/2016	Nickel	12	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (8-10')	5/6/2016	Selenium	< 2.6	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (18-20')	5/6/2016	Antimony	2.9	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (18-20')	5/6/2016	Arsenic	2	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-18 (18-20')	5/6/2016	Barium	1000	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-18 (18-20')	5/6/2016	Beryllium	0.86	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-18 (18-20')	5/6/2016	Cadmium	< 0.074	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-18 (18-20')	5/6/2016	cobalt	8.3	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-18 (18-20')	5/6/2016	Lead	2.6	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (18-20')	5/6/2016	manganese	690	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (18-20')	5/6/2016	Nickel	15	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-18 (18-20')	5/6/2016	Selenium	< 1.3	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-19 (12-14')	5/17/2016	1-Methylnaphthalene	7.2	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-19 (18-20')	5/17/2016	1-Methylnaphthalene	0.0014	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20 (8-10')	5/17/2016	1-Methylnaphthalene	41	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20 (10-12')	5/17/2016	1-Methylnaphthalene	25	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20 (16-18')	5/17/2016	1-Methylnaphthalene	8.4	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-19 (12-14')	5/17/2016	Methylene chloride	0.05	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-20 (8-10')	5/17/2016	Methylene chloride	0.51	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-20 (10-12')	5/17/2016	Methylene chloride	0.5	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank

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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-19 (2-2.5')	5/17/2016	mercury	0.002	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-19 (12-14')	5/17/2016	mercury	0.0019	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-19 (18-20')	5/17/2016	mercury	0.00081	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-20 (2-2.5')	5/17/2016	mercury	2	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20 (8-10')	5/17/2016	mercury	0.23	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20 (10-12')	5/17/2016	mercury	0.0041	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-20 (16-18')	5/17/2016	mercury	0.37	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20 (20-22')	5/17/2016	mercury	0.0012	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-19 (2-2.5')	5/17/2016	Antimony	4	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	Arsenic	1.9	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	Barium	160	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	Beryllium	1.2	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	Cadmium	< 0.0759	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-19 (2-2.5')	5/17/2016	cobalt	5.2	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-19 (2-2.5')	5/17/2016	Lead	5.1	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	manganese	280	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	Nickel	9.8	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (2-2.5')	5/17/2016	Selenium	< 1.3064	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-19 (12-14')	5/17/2016	Antimony	< 6.8559	mg/kg	soil	UJ	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (12-14')	5/17/2016	Arsenic	< 4.2233	mg/kg	soil	UJ	Qualified low bias due to Method MSD recovery
SWMU 10-19 (12-14')	5/17/2016	Barium	830	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-19 (12-14')	5/17/2016	Beryllium	1.1	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-19 (12-14')	5/17/2016	Cadmium	< 0.3668	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-19 (12-14')	5/17/2016	cobalt	6.5	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-19 (12-14')	5/17/2016	Lead	5.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (12-14')	5/17/2016	manganese	1200	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (12-14')	5/17/2016	Nickel	15	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (12-14')	5/17/2016	Selenium	< 6.3156	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-19 (18-20')	5/17/2016	Antimony	3.2	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (18-20')	5/17/2016	Arsenic	3	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-19 (18-20')	5/17/2016	Barium	480	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-19 (18-20')	5/17/2016	Beryllium	1	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-19 (18-20')	5/17/2016	Cadmium	< 0.071	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-19 (18-20')	5/17/2016	cobalt	7.9	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-19 (18-20')	5/17/2016	Lead	3.5	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (18-20')	5/17/2016	manganese	410	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (18-20')	5/17/2016	Nickel	15	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-19 (18-20')	5/17/2016	Selenium	< 1.219	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (2-2.5')	5/17/2016	Antimony	2.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (2-2.5')	5/17/2016	Arsenic	5.4	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (2-2.5')	5/17/2016	Barium	490	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-20 (2-2.5')	5/17/2016	Beryllium	0.77	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (2-2.5')	5/17/2016	Cadmium	< 0.076	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (2-2.5')	5/17/2016	cobalt	4.9	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-20 (2-2.5')	5/17/2016	Lead	21	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (2-2.5')	5/17/2016	manganese	520	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (2-2.5')	5/17/2016	Nickel	12	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (2-2.5')	5/17/2016	Selenium	< 1.3049	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (8-10')	5/17/2016	Antimony	2.8	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (8-10')	5/17/2016	Arsenic	3.9	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (8-10')	5/17/2016	Barium	410	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-20 (8-10')	5/17/2016	Beryllium	1.2	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (8-10')	5/17/2016	Cadmium	< 0.079	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (8-10')	5/17/2016	cobalt	5.6	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-20 (8-10')	5/17/2016	Lead	2.8	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (8-10')	5/17/2016	manganese	370	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (8-10')	5/17/2016	Nickel	11	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (8-10')	5/17/2016	Selenium	< 1.3674	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (10-12')	5/17/2016	Antimony	3.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (10-12')	5/17/2016	Arsenic	1.9	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (10-12')	5/17/2016	Barium	250	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-20 (10-12')	5/17/2016	Beryllium	1.1	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (10-12')	5/17/2016	Cadmium	< 0.081	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (10-12')	5/17/2016	cobalt	5.6	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-20 (10-12')	5/17/2016	Lead	6	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (10-12')	5/17/2016	manganese	190	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (10-12')	5/17/2016	Nickel	10	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (10-12')	5/17/2016	Selenium	< 1.3864	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (16-18')	5/17/2016	Antimony	2.5	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (16-18')	5/17/2016	Arsenic	2.2	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (16-18')	5/17/2016	Barium	210	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-20 (16-18')	5/17/2016	Beryllium	0.87	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (16-18')	5/17/2016	Cadmium	< 0.075	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (16-18')	5/17/2016	cobalt	5.5	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-20 (16-18')	5/17/2016	Lead	5.3	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (16-18')	5/17/2016	manganese	750	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (16-18')	5/17/2016	Nickel	10	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (16-18')	5/17/2016	Selenium	< 1.2956	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (20-22')	5/17/2016	Antimony	3.3	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (20-22')	5/17/2016	Arsenic	2.7	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20 (20-22')	5/17/2016	Barium	750	mg/kg	soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-20 (20-22')	5/17/2016	Beryllium	0.88	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery

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Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-20 (20-22')	5/17/2016	Cadmium	< 0.072	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-20 (20-22')	5/17/2016	cobalt	8.5	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-20 (20-22')	5/17/2016	Lead	3.5	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (20-22')	5/17/2016	manganese	1100	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (20-22')	5/17/2016	Nickel	14	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-20 (20-22')	5/17/2016	Selenium	< 1.2368	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-21 (20-22')	5/17/2016	cyanide	0.044	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-22 (2-2.5')	5/17/2016	cyanide	0.04	mg/kg	soil	J-	Qualified low bias due to Method MS recovery
SWMU 10-22 (8-9')	5/17/2016	cyanide	< 0.039	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-21 (2-2.5')	5/17/2016	Bis(2-ethylhexyl)phthalate	0.17	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-21 (12-14')	5/17/2016	Bis(2-ethylhexyl)phthalate	0.14	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-21 (20-22')	5/17/2016	Bis(2-ethylhexyl)phthalate	0.12	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-22 (2-2.5')	5/17/2016	Bis(2-ethylhexyl)phthalate	0.19	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-22 (8-9')	5/17/2016	Bis(2-ethylhexyl)phthalate	0.17	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-21 (12-14')	5/17/2016	Di-n-butyl phthalate	0.11	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-22 (2-2.5')	5/17/2016	Di-n-butyl phthalate	0.12	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-22 (8-9')	5/17/2016	Di-n-butyl phthalate	0.11	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-21 (2-2.5')	5/17/2016	Antimony	< 1.3	mg/kg	soil	UJ	Qualified low bias due to Method MS/MSD recovery
SWMU 10-21 (2-2.5')	5/17/2016	cobalt	3.7	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-21 (2-2.5')	5/17/2016	Lead	2.1	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-21 (2-2.5')	5/17/2016	Nickel	6	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-21 (2-2.5')	5/17/2016	Selenium	< 1.2	mg/kg	soil	UJ	Qualified low bias due to Method MSD recovery
SWMU 10-21 (2-2.5')	5/17/2016	zinc	16	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-21 (12-14')	5/17/2016	Antimony	< 7.3205	mg/kg	soil	UJ	Qualified low bias due to Method MS/MSD recovery
SWMU 10-21 (12-14')	5/17/2016	cobalt	5.6	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-21 (12-14')	5/17/2016	Lead	5.1	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-21 (12-14')	5/17/2016	Nickel	11	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-21 (12-14')	5/17/2016	Selenium	< 1.3487	mg/kg	soil	UJ	Qualified low bias due to Method MSD recovery
SWMU 10-21 (12-14')	5/17/2016	zinc	20	mg/kg	soil	J-	Qualified low bias due to Method MSD recovery
SWMU 10-20-GW	5/20/2016	cyanide	1.05	mg/l	Water	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20-GW	5/20/2016	mercury	0.00016	mg/l	Water	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-20-GW	5/20/2016	methlyene chloride	3.4	ug/l	Water	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-20-GW	5/20/2016	cyanide	1.05	mg/l	Water	J-	Qualified low bias due to Method MSD recovery
SWMU 10-23 (2-2.5')	9/19/2016	Antimony	< 2.2222	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-23 (2-2.5')	9/19/2016	Arsenic	< 1.9626	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-23 (2-2.5')	9/19/2016	Barium	220	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (2-2.5')	9/19/2016	Lead	2.6	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (2-2.5')	9/19/2016	Nickel	12	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (2-2.5')	9/19/2016	Selenium	< 4.0179	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-23 (2-2.5')	9/19/2016	zinc	21	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (15-16')	9/19/2016	Antimony	< 1.1461	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch

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Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-23 (15-16')	9/19/2016	Arsenic	1	mg/kg	soil	J-	Qualfied low bias due to MS recovery for batch
SWMU 10-23 (15-16')	9/19/2016	Barium	730	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (15-16')	9/19/2016	Lead	0.95	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (15-16')	9/19/2016	Nickel	13	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-23 (15-16')	9/19/2016	Selenium	< 2.0723	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-23 (15-16')	9/19/2016	zinc	25	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (2-2.5')	9/19/2016	Antimony	1.1	mg/kg	soil	J-	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (2-2.5')	9/19/2016	Arsenic	< 0.9076	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-24 (2-2.5')	9/19/2016	Barium	190	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (2-2.5')	9/19/2016	Lead	2.3	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (2-2.5')	9/19/2016	Nickel	5.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (2-2.5')	9/19/2016	Selenium	< 1.858	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (2-2.5')	9/19/2016	zinc	11	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (6-8')	9/19/2016	Antimony	< 1.2345	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (6-8')	9/19/2016	Arsenic	< 1.0903	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-24 (6-8')	9/19/2016	Barium	120	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (6-8')	9/19/2016	Lead	3.9	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (6-8')	9/19/2016	Nickel	9.9	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (6-8')	9/19/2016	Selenium	< 2.2321	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (6-8')	9/19/2016	zinc	18	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (8-10')	9/19/2016	Antimony	< 2.4091	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (8-10')	9/19/2016	Arsenic	< 2.1276	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-24 (8-10')	9/19/2016	Barium	130	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (8-10')	9/19/2016	Lead	1.5	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (8-10')	9/19/2016	Nickel	12	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (8-10')	9/19/2016	Selenium	< 4.3557	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (8-10')	9/19/2016	zinc	22	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (15-16')	9/19/2016	Antimony	2.1	mg/kg	soil	J-	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (15-16')	9/19/2016	Arsenic	< 1.0181	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-24 (15-16')	9/19/2016	Barium	510	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (15-16')	9/19/2016	Lead	1.1	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (15-16')	9/19/2016	Nickel	16	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (15-16')	9/19/2016	Selenium	< 2.0843	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-24 (15-16')	9/19/2016	zinc	26	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (2-2.5')	9/19/2016	Antimony	< 1.1611	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-25 (2-2.5')	9/19/2016	Arsenic	< 1.0254	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-25 (2-2.5')	9/19/2016	Barium	96	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (2-2.5')	9/19/2016	Lead	2.1	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (2-2.5')	9/19/2016	Nickel	5.7	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (2-2.5')	9/19/2016	Selenium	< 2.0993	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-25 (2-2.5')	9/19/2016	zinc	11	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery

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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-25 (10-12')	9/19/2016	Antimony	< 2.4915	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-25 (10-12')	9/19/2016	Arsenic	< 2.2003	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-25 (10-12')	9/19/2016	Barium	190	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (10-12')	9/19/2016	Lead	2.9	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (10-12')	9/19/2016	Nickel	14	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (10-12')	9/19/2016	Selenium	< 4.5047	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-25 (10-12')	9/19/2016	zinc	26	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (16.5-18')	9/19/2016	Antimony	1.6	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-25 (16.5-18')	9/19/2016	Arsenic	< 1.0232	mg/kg	soil	UJ	Qualfied low bias due to MS recovery for batch
SWMU 10-25 (16.5-18')	9/19/2016	Barium	460	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (16.5-18')	9/19/2016	Lead	< 0.2001	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (16.5-18')	9/19/2016	Nickel	15	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-25 (16.5-18')	9/19/2016	Selenium	< 2.0948	mg/kg	soil	UJ	Qualfied low bias due to MS/MSD recovery for batch
SWMU 10-25 (16.5-18')	9/19/2016	zinc	27	mg/kg	soil	J-	Qualified low bias due to Method MS/MSD recovery
SWMU 10-24 (6-8')	9/19/2016	Toluene	0.25	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (6-8')	9/19/2016	Bromomethane	0.32	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (2-2.5')	9/19/2016	1,2,4-Trimethylbenzene	5.8	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-23 (15-16')	9/19/2016	1-Methylnaphthalene	0.0004	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (15-16')	9/19/2016	1-Methylnaphthalene	0.0008	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (2-2.5')	9/19/2016	1-Methylnaphthalene	13	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-23 (2-2.5')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.15	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-23 (2-2.5')	9/19/2016	Di-n-butyl phthalate	0.22	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-23 (15-16')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.17	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-23 (15-16')	9/19/2016	Di-n-butyl phthalate	0.25	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (2-2.5')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.16	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (2-2.5')	9/19/2016	Di-n-butyl phthalate	0.22	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (8-10')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.23	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (8-10')	9/19/2016	Di-n-butyl phthalate	0.28	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (15-16')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.16	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-24 (15-16')	9/19/2016	Di-n-butyl phthalate	0.15	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (2-2.5')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.22	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (2-2.5')	9/19/2016	Di-n-butyl phthalate	0.35	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (10-12')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.16	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (10-12')	9/19/2016	Di-n-butyl phthalate	0.22	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (16.5-18')	9/19/2016	Bis(2-ethylhexyl)phthalate	0.17	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-25 (16.5-18')	9/19/2016	Di-n-butyl phthalate	0.35	mg/kg	soil	J+	qualified as high due to presence in field sample at conc. <5 times conc. in method blank
SWMU 10-23 (2-2.5')	9/19/2016	manganese	450	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-23 (2-2.5')	9/19/2016	zinc	21	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-23 (15-16')	9/19/2016	manganese	850	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-23 (15-16')	9/19/2016	zinc	25	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (2-2.5')	9/19/2016	manganese	370	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-24 (2-2.5')	9/19/2016	zinc	11	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (6-8')	9/19/2016	manganese	200	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (6-8')	9/19/2016	zinc	18	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (8-10')	9/19/2016	manganese	290	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (8-10')	9/19/2016	zinc	22	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (15-16')	9/19/2016	manganese	1400	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-24 (15-16')	9/19/2016	zinc	26	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (2-2.5')	9/19/2016	manganese	500	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (2-2.5')	9/19/2016	zinc	11	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (10-12')	9/19/2016	manganese	300	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (10-12')	9/19/2016	zinc	26	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (16.5-18')	9/19/2016	manganese	1100	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25 (16.5-18')	9/19/2016	zinc	27	mg/kg	soil	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25-GW	9/21/2016	manganese (total)	2.1	mg/l	Water	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25-GW	9/21/2016	Bis(2-ethylhexyl)phthalate	2.8	ug/l	Water	J+	qualified high due to presence in method blank, blank concentration <5 times field concentration
SWMU 10-25-GW	9/21/2016	4-Nitrophenol	< 2.553	ug/l	Water	UJ	Qualfied low bias due to MS/MSD recovery for batch

Notes:

UJ = Estimated reporting concentration
J- = Low bias
J+ = High bias

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-14 (0-2') Sample Result	SWMU 10 DUP01 Duplicate Result	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	0.849320979 U	0.858017826 U	NC
	Diesel Range Organics (DRO)	160	150	1.6
	Motor Oil Range Organics (MRO)	330	310	1.6
VOCs (ug/kg-dry)	1,3,5-Trimethylbenzene	0.000347 J	0.000422 J	4.9
	Methylene chloride	0.000606 J	0.00051 J	4.3
	sec-Butylbenzene	0.000645 J	0.000534 J	4.7
	Ethylbenzene	0.000703 J	0.000638 J	2.4
	1,2,4-Trimethylbenzene	0.00077 J	0.000972 J	5.8
	2-Hexanone	0.000886 J	0.000653 J	7.6
	Benzene	0.00118 J	0.00104 J	3.2
	Xylenes, Total	0.00182 J	0.00171	1.6
	Toluene	0.00263	0.00232	3.1
	Acetone	0.0237	0.0166	8.8
	2-Butanone	0.00407 J	0.00253 J	11.7
	1,1,1,2-Tetrachloroethane	0.00031 U	0.00026 U	NC
	1,1,1-Trichloroethane	0.00027 U	0.00023 U	NC
	1,1,2,2-Tetrachloroethane	0.00042 U	0.00035 U	NC
	1,1,2-Trichloroethane	0.00193 U	0.00159 U	NC
	1,1-Dichloroethane	0.00045 U	0.00037 U	NC
	1,1-Dichloroethene	0.00032 U	0.00027 U	NC
	1,1-Dichloropropene	0.00035 U	0.00029 U	NC
	1,2,3-Trichlorobenzene	0.00070 U	0.00058 U	NC
	1,2,3-Trichloropropane	0.00068 U	0.00056 U	NC
	1,2,4-Trichlorobenzene	0.00072 U	0.00060 U	NC
	1,2-Dibromo-3-chloropropane	0.00057 U	0.00047 U	NC
	1,2-Dibromoethane (EDB)	0.00023 U	0.00019 U	NC
	1,2-Dichlorobenzene	0.00043 U	0.00035 U	NC
	1,2-Dichloroethane (EDC)	0.00052 U	0.00043 U	NC
	1,2-Dichloropropane	0.00041 U	0.00034 U	NC
	1,3-Dichlorobenzene	0.00033 U	0.00027 U	NC
	1,3-Dichloropropane	0.00030 U	0.00025 U	NC
	1,4-Dichlorobenzene	0.00030 U	0.00025 U	NC
	1-Methylnaphthalene	0.00076 U	0.00063 U	NC
	2,2-Dichloropropane	0.00033 U	0.00028 U	NC
	2-Chlorotoluene	0.00038 U	0.00031 U	NC
	2-Methylnaphthalene	0.00075 U	0.00062 U	NC
	4-Chlorotoluene	0.00037 U	0.00031 U	NC
	4-Isopropyltoluene	0.00075 U	0.00062 U	NC
	4-Methyl-2-pentanone	0.00081 U	0.00067 U	NC
	Bromobenzene	0.00054 U	0.00044 U	NC
	Bromodichloromethane	0.00026 U	0.00022 U	NC
	Bromoform	0.00050 U	0.00041 U	NC
	Bromomethane	0.00114 U	0.00094 U	NC
	Carbon disulfide	0.00087 U	0.00072 U	NC
	Carbon tetrachloride	0.00035 U	0.00029 U	NC
	Chlorobenzene	0.00020 U	0.00016 U	NC
	Chloroethane	0.00193 U	0.00159 U	NC
	Chloroform	0.00040 U	0.00033 U	NC
	Chloromethane	0.00023 U	0.00019 U	NC
	cis-1,2-DCE	0.00051 U	0.00042 U	NC
	cis-1,3-Dichloropropene	0.00193 U	0.00159 U	NC
	Dibromochloromethane	0.00022 U	0.00018 U	NC
	Dibromomethane	0.00109 U	0.00090 U	NC
	Dichlorodifluoromethane	0.00079 U	0.00065 U	NC
	Hexachlorobutadiene	0.00039 U	0.00032 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-14 (0-2') Sample Result	SWMU 10 DUP01 Duplicate Result	RPD (%)
	Isopropylbenzene	0.00045 U	0.00037 U	NC
	Methyl tert-butyl ether (MTBE)	0.00081 U	0.00067 U	NC
	Naphthalene	0.00063 U	0.00052 U	NC
	n-Butylbenzene	0.00079 U	0.00065 U	NC
	n-Propylbenzene	0.00036 U	0.00030 U	NC
	Styrene	0.00032 U	0.00026 U	NC
	tert-Butylbenzene	0.00030 U	0.00024 U	NC
	Tetrachloroethene (PCE)	0.00038 U	0.00032 U	NC
	trans-1,2-DCE	0.00031 U	0.00026 U	NC
	trans-1,3-Dichloropropene	0.00025 U	0.00021 U	NC
	Trichloroethene (TCE)	0.00038 U	0.00032 U	NC
	Trichlorofluoromethane	0.00039 U	0.00032 U	NC
	Vinyl chloride	0.00022 U	0.00018 U	NC
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	0.11459 U	2.81548 U	NC
	1,2-Dichlorobenzene	0.10707 U	2.63077 U	NC
	1,3-Dichlorobenzene	0.09942 U	2.44287 U	NC
	1,4-Dichlorobenzene	0.11708 U	2.87684 U	NC
	1-Methylnaphthalene	0.10376 U	2.54942 U	NC
	2,4,5-Trichlorophenol	0.13045 U	3.20523 U	NC
	2,4,6-Trichlorophenol	0.12941 U	3.17980 U	NC
	2,4-Dichlorophenol	0.11194 U	2.75040 U	NC
	2,4-Dimethylphenol	0.08799 U	2.16194 U	NC
	2,4-Dinitrophenol	0.04651 U	1.14282 U	NC
	2,4-Dinitrotoluene	0.10014 U	2.46060 U	NC
	2,6-Dinitrotoluene	0.12442 U	3.05723 U	NC
	2-Chloronaphthalene	0.11993 U	2.94674 U	NC
	2-Chlorophenol	0.10446 U	2.56672 U	NC
	2-Methylnaphthalene	0.10244 U	2.51697 U	NC
	2-Methylphenol	0.11222 U	2.75733 U	NC
	2-Nitroaniline	0.12737 U	3.12964 U	NC
	2-Nitrophenol	0.10061 U	2.47207 U	NC
	3,3´-Dichlorobenzidine	0.08619 U	2.11789 U	NC
	3+4-Methylphenol	0.11601 U	2.85059 U	NC
	3-Nitroaniline	0.10785 U	2.64997 U	NC
	4,6-Dinitro-2-methylphenol	0.06086 U	1.49551 U	NC
	4-Bromophenyl phenyl ether	0.11876 U	2.91810 U	NC
	4-Chloro-3-methylphenol	0.11145 U	2.73851 U	NC
	4-Chloroaniline	0.10352 U	2.54359 U	NC
	4-Chlorophenyl phenyl ether	0.16668 U	4.09557 U	NC
	4-Nitroaniline	0.10054 U	2.47040 U	NC
	4-Nitrophenol	0.09644 U	2.36972 U	NC
	Acenaphthene	0.13640 U	3.35154 U	NC
	Acenaphthylene	0.11339 U	2.78620 U	NC
	Aniline	0.09743 U	2.39403 U	NC
	Anthracene	0.09508 U	2.33627 U	NC
	Azobenzene	0.12548 U	3.08325 U	NC
	Benz(a)anthracene	0.08798 U	2.16169 U	NC
	Benzo(a)pyrene	0.12562 U	3.08667 U	NC
	Benzo(b)fluoranthene	0.10629 U	2.61175 U	NC
	Benzo(g,h,i)perylene	0.12738 U	3.12986 U	NC
	Benzo(k)fluoranthene	0.12650 U	3.10822 U	NC
	Benzoic acid	0.06378 U	1.56717 U	NC
	Benzyl alcohol	0.09943 U	2.44304 U	NC
	Bis(2-chloroethoxy)methane	0.10684 U	2.62506 U	NC
	Bis(2-chloroethyl)ether	0.11060 U	2.71765 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-14 (0-2') Sample Result	SWMU 10 DUP01 Duplicate Result	RPD (%)
	Bis(2-chloroisopropyl)ether	0.08552 U	2.10120 U	NC
	Bis(2-ethylhexyl)phthalate	0.12576 U	3.09000 U	NC
	Butyl benzyl phthalate	0.13665 U	3.35771 U	NC
	Carbazole	0.10425 U	2.56160 U	NC
	Chrysene	0.11240 U	2.76177 U	NC
	Dibenz(a,h)anthracene	0.12127 U	2.97976 U	NC
	Dibenzofuran	0.11971 U	2.94148 U	NC
	Diethyl phthalate	0.12704 U	3.12139 U	NC
	Dimethyl phthalate	0.10302 U	2.53119 U	NC
	Di-n-butyl phthalate	0.12659 U	3.11051 U	NC
	Di-n-octyl phthalate	0.12461 U	3.06182 U	NC
	Fluoranthene	0.13583 U	3.33755 U	NC
	Fluorene	0.15239 U	3.74428 U	NC
	Hexachlorobenzene	0.10565 U	2.59588 U	NC
	Hexachlorobutadiene	0.11074 U	2.72107 U	NC
	Hexachlorocyclopentadiene	0.07764 U	1.90769 U	NC
	Hexachloroethane	0.09964 U	2.44821 U	NC
	Indeno(1,2,3-cd)pyrene	0.12721 U	3.12562 U	NC
	Isophorone	0.11934 U	2.93240 U	NC
	Naphthalene	0.10651 U	2.61700 U	NC
	Nitrobenzene	0.11525 U	2.83176 U	NC
	N-Nitrosodi-n-propylamine	0.11603 U	2.85088 U	NC
	N-Nitrosodiphenylamine	0.10022 U	2.46238 U	NC
	Pentachlorophenol	0.06989 U	1.71719 U	NC
	Phenanthrene	0.11710 U	2.87735 U	NC
	Phenol	0.10032 U	2.46489 U	NC
	Pyrene	0.14447 U	3.54968 U	NC
	Pyridine	0.09406 U	2.31115 U	NC
Metals (mg/kg-dry):	Antimony	1.51 U	1.45 U	NC
	Arsenic	1.4 J	2.7 J	15.9
	Barium	460	380	4.8
	Beryllium	0.71	0.59	4.6
	Cadmium	0.03 U	0.03 U	NC
	Chromium	14	16	3.3
	Cobalt	3.8	3.4	2.8
	Cyanide	0.28 U	0.28 U	NC
	Hexavalent Chromium	2.26 U	2.26 U	NC
	Iron	10000	9100	2.4
	Lead	3.8	3.6	1.4
	Manganese	440	490	2.7
	Mercury	0.034 J	0.035 J	0.7
	Nickel	6.5	5.6	3.7
	Selenium	1.76 U	1.69 U	NC
	Silver	0.03 U	0.03 U	NC
	Vanadium	17	21	5.3
	Zinc	29	24	4.7

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram

Table 3A
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-9 (4-6') Sample Result	SWMU 10-9 DUP02 Duplicate Result	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	12 J	69	**35.2**
	Diesel Range Organics (DRO)	300	530	13.9
	Motor Oil Range Organics (MRO)	120	170	8.6
VOCs (ug/kg-dry)	1,1,1,2-Tetrachloroethane	0.01186 U	0.02684 U	NC
	1,1,1-Trichloroethane	0.02196 U	0.04971 U	NC
	1,1,2,2-Tetrachloroethane	0.01752 U	0.03967 U	NC
	1,1,2-Trichloroethane	0.01738 U	0.03933 U	NC
	1,1-Dichloroethane	0.05784 U	0.13093 U	NC
	1,1-Dichloroethene	0.00995 U	0.02253 U	NC
	1,1-Dichloropropene	0.02153 U	0.04874 U	NC
	1,2,3-Trichlorobenzene	0.03086 U	0.06986 U	NC
	1,2,3-Trichloropropane	0.02426 U	0.05491 U	NC
	1,2,4-Trichlorobenzene	0.02668 U	0.06040 U	NC
	1,2,4-Trimethylbenzene	0.42	2.8	**37.0**
	1,2-Dibromo-3-chloropropane	0.02484 U	0.05622 U	NC
	1,2-Dibromoethane (EDB)	0.01152 U	0.02607 U	NC
	1,2-Dichlorobenzene	0.00872 U	0.01974 U	NC
	1,2-Dichloroethane (EDC)	0.05784 U	0.13093 U	NC
	1,2-Dichloropropane	0.00808 U	0.01830 U	NC
	1,3,5-Trimethylbenzene	0.12 J	0.82	**37.2**
	1,3-Dichlorobenzene	0.01703 U	0.03854 U	NC
	1,3-Dichloropropane	0.01991 U	0.04508 U	NC
	1,4-Dichlorobenzene	0.01801 U	0.04077 U	NC
	1-Methylnaphthalene	1.1	9.3	**39.4**
	2,2-Dichloropropane	0.02105 U	0.04765 U	NC
	2-Butanone	0.09296 U	0.21044 U	NC
	2-Chlorotoluene	0.01634 U	0.03699 U	NC
	2-Hexanone	0.03556 U	0.08050 U	NC
	2-Methylnaphthalene	1.5	13	**39.7**
	4-Chlorotoluene	0.01093 U	0.02475 U	NC
	4-Isopropyltoluene	0.01028 U	0.21 J	NC
	4-Methyl-2-pentanone	0.02509 U	0.05679 U	NC
	Acetone	0.10782 U	0.24407 U	NC
	Benzene	0.02144 U	0.04854 U	NC
	Bromobenzene	0.01073 U	0.02430 U	NC
	Bromodichloromethane	0.01183 U	0.02677 U	NC
	Bromoform	0.01162 U	0.02632 U	NC
	Bromomethane	0.02791 U	0.06318 U	NC
	Carbon disulfide	0.10405 U	0.23554 U	NC
	Carbon tetrachloride	0.01408 U	0.03188 U	NC
	Chlorobenzene	0.01113 U	0.02519 U	NC
	Chloroethane	0.11192 U	0.25337 U	NC
	Chloroform	0.01507 U	0.03412 U	NC
	Chloromethane	0.01674 U	0.03789 U	NC
	cis-1,2-DCE	0.01829 U	0.04141 U	NC
	cis-1,3-Dichloropropene	0.01003 U	0.02271 U	NC
	Dibromochloromethane	0.01084 U	0.02454 U	NC
	Dibromomethane	0.01522 U	0.03446 U	NC
	Dichlorodifluoromethane	0.03637 U	0.08232 U	NC
	Ethylbenzene	0.04 J	0.34	**39.5**
	Hexachlorobutadiene	0.02008 U	0.04545 U	NC
	Isopropylbenzene	0.016 J	0.16 J	**40.9**
	Methyl tert-butyl ether (MTBE)	0.02045 U	0.04629 U	NC
	Methylene chloride	0.05784 U	0.13093 U	NC
	Naphthalene	0.32	2.5	**38.7**
	n-Butylbenzene	0.065 J	0.4 J	**36.0**

Table 3A
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-9 (4-6') Sample Result	SWMU 10-9 DUP02 Duplicate Result	RPD (%)
	n-Propylbenzene	0.052 J	0.34	**36.7**
	sec-Butylbenzene	0.021 J	0.17 J	**39.0**
	Styrene	0.02654 U	0.06008 U	NC
	tert-Butylbenzene	0.01656 U	0.03749 U	NC
	Tetrachloroethene (PCE)	0.01253 U	0.02836 U	NC
	Toluene	0.01721 U	0.03895 U	NC
	trans-1,2-DCE	0.00940 U	0.02127 U	NC
	trans-1,3-Dichloropropene	0.02603 U	0.05893 U	NC
	Trichloroethene (TCE)	0.01408 U	0.03188 U	NC
	Trichlorofluoromethane	0.04364 U	0.09880 U	NC
	Vinyl chloride	0.05784 U	0.13093 U	NC
	Xylenes, Total	0.26 J	1.9	**38.0**
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	1.01696 U	0.12038 U	NC
	1,2-Dichlorobenzene	0.95024 U	0.11248 U	NC
	1,3-Dichlorobenzene	0.88237 U	0.10445 U	NC
	1,4-Dichlorobenzene	1.03912 U	0.12300 U	NC
	1-Methylnaphthalene	1.1 J	0.7	11.1
	2,4,5-Trichlorophenol	1.15774 U	0.13704 U	NC
	2,4,6-Trichlorophenol	1.14855 U	0.13595 U	NC
	2,4-Dichlorophenol	0.99345 U	0.11760 U	NC
	2,4-Dimethylphenol	0.78090 U	0.09244 U	NC
	2,4-Dinitrophenol	0.41279 U	0.04886 U	NC
	2,4-Dinitrotoluene	0.88877 U	0.10520 U	NC
	2,6-Dinitrotoluene	1.10428 U	0.13071 U	NC
	2-Chloronaphthalene	1.06437 U	0.12599 U	NC
	2-Chlorophenol	0.92710 U	0.10974 U	NC
	2-Methylnaphthalene	1 J	0.89	2.9
	2-Methylphenol	0.99595 U	0.11789 U	NC
	2-Nitroaniline	1.13043 U	0.13381 U	NC
	2-Nitrophenol	0.89292 U	0.10569 U	NC
	3,3´-Dichlorobenzidine	0.76499 U	0.09055 U	NC
	3+4-Methylphenol	1.02964 U	0.12188 U	NC
	3-Nitroaniline	0.95717 U	0.11330 U	NC
	4,6-Dinitro-2-methylphenol	0.54018 U	0.06394 U	NC
	4-Bromophenyl phenyl ether	1.05402 U	0.12477 U	NC
	4-Chloro-3-methylphenol	0.98915 U	0.11709 U	NC
	4-Chloroaniline	0.91875 U	0.10875 U	NC
	4-Chlorophenyl phenyl ether	1.47933 U	0.17511 U	NC
	4-Nitroaniline	0.89231 U	0.10562 U	NC
	4-Nitrophenol	0.85595 U	0.10132 U	NC
	Acenaphthene	1.21058 U	0.14330 U	NC
	Acenaphthylene	1.00638 U	0.11913 U	NC
	Aniline	0.86473 U	0.10236 U	NC
	Anthracene	0.84386 U	0.09989 U	NC
	Azobenzene	1.11368 U	0.13183 U	NC
	Benz(a)anthracene	0.78081 U	0.09242 U	NC
	Benzo(a)pyrene	1.11491 U	0.13197 U	NC
	Benzo(b)fluoranthene	0.94337 U	0.11167 U	NC
	Benzo(g,h,i)perylene	1.13051 U	0.13382 U	NC
	Benzo(k)fluoranthene	1.12270 U	0.13289 U	NC
	Benzoic acid	0.56607 U	0.06701 U	NC
	Benzyl alcohol	0.88243 U	0.10445 U	NC
	Bis(2-chloroethoxy)methane	0.94818 U	0.11224 U	NC
	Bis(2-chloroethyl)ether	0.98162 U	0.11619 U	NC
	Bis(2-chloroisopropyl)ether	0.75896 U	0.08984 U	NC
	Bis(2-ethylhexyl)phthalate	1.11611 U	0.13212 U	NC

Table 3A
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-9 (4-6') Sample Result	SWMU 10-9 DUP02 Duplicate Result	RPD (%)
	Butyl benzyl phthalate	1.21281 U	0.14356 U	NC
	Carbazole	0.92525 U	0.10952 U	NC
	Chrysene	0.99756 U	0.11808 U	NC
	Dibenz(a,h)anthracene	1.07629 U	0.12740 U	NC
	Dibenzofuran	1.06247 U	0.12577 U	NC
	Diethyl phthalate	1.12745 U	0.13346 U	NC
	Dimethyl phthalate	0.91427 U	0.10822 U	NC
	Di-n-butyl phthalate	1.12352 U	0.13299 U	NC
	Di-n-octyl phthalate	1.10594 U	0.13091 U	NC
	Fluoranthene	1.20553 U	0.14270 U	NC
	Fluorene	1.35244 U	0.16009 U	NC
	Hexachlorobenzene	0.93764 U	0.11099 U	NC
	Hexachlorobutadiene	0.98286 U	0.11634 U	NC
	Hexachlorocyclopentadiene	0.68906 U	0.08156 U	NC
	Hexachloroethane	0.88430 U	0.10467 U	NC
	Indeno(1,2,3-cd)pyrene	1.12898 U	0.13364 U	NC
	Isophorone	1.05919 U	0.12538 U	NC
	Naphthalene	0.94527 U	0.33	NC
	Nitrobenzene	1.02284 U	0.12107 U	NC
	N-Nitrosodi-n-propylamine	1.02975 U	0.12189 U	NC
	N-Nitrosodiphenylamine	0.88942 U	0.10528 U	NC
	Pentachlorophenol	0.62025 U	0.07342 U	NC
	Phenanthrene	1.03930 U	0.12302 U	NC
	Phenol	0.89032 U	0.10539 U	NC
	Pyrene	1.28215 U	0.15177 U	NC
	Pyridine	0.83479 U	0.09881 U	NC
Metals (mg/kg-dry):	Antimony	1.56 U	1.54 U	NC
	Arsenic	1.1 J	1.3 J	4.2
	Barium	250	190	6.8
	Beryllium	0.94	0.9	1.1
	Cadmium	0.033002519 U	0.03 U	NC
	Chromium	14	8.5	12.2
	Cobalt	5.3	4.1	6.4
	Cyanide	0.300287306 U	0.30 U	NC
	Hexavalent Chromium	2.40229845 U	2.37 U	NC
	Iron	16000	13000	5.2
	Lead	3.2	3.3	0.8
	Manganese	290	170	13.0
	Mercury	0.0086 J	0.0043 J	16.7
	Nickel	10	7.4	7.5
	Selenium	1.820599379 U	1.80 U	NC
	Silver	0.035376801 U	0.03 U	NC
	Vanadium	19	19	0.0
	Zinc	32	49	10.5

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-6 (10-12') Sample Result	SWMU 10 DUP03 Field Duplicate	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	1.22 U	1.16 U	NC
	Diesel Range Organics (DRO)	5.32 U	5.44 U	NC
	Motor Oil Range Organics (MRO)	48.08 U	49.16 U	NC
VOCs (ug/kg-dry)	1,1,1,2-Tetrachloroethane	0.000407 U	0.000378 U	NC
	1,1,1-Trichloroethane	0.000356 U	0.000331 U	NC
	1,1,2,2-Tetrachloroethane	0.000550 U	0.000511 U	NC
	1,1,2-Trichloroethane	0.002501 U	0.002325 U	NC
	1,1-Dichloroethane	0.000584 U	0.000543 U	NC
	1,1-Dichloroethene	0.000417 U	0.000388 U	NC
	1,1-Dichloropropene	0.000458 U	0.000426 U	NC
	1,2,3-Trichlorobenzene	0.000915 U	0.000851 U	NC
	1,2,3-Trichloropropane	0.000878 U	0.000816 U	NC
	1,2,4-Trichlorobenzene	0.000937 U	0.000871 U	NC
	1,2,4-Trimethylbenzene	0.00363	0.00292	5.4
	1,2-Dibromo-3-chloropropane	0.000735 U	0.000683 U	NC
	1,2-Dibromoethane (EDB)	0.000299 U	0.000278 U	NC
	1,2-Dichlorobenzene	0.000555 U	0.000516 U	NC
	1,2-Dichloroethane (EDC)	0.000670 U	0.000623 U	NC
	1,2-Dichloropropane	0.000534 U	0.000497 U	NC
	1,3,5-Trimethylbenzene	0.0022 J	0.00172 J	6.1
	1,3-Dichlorobenzene	0.000424 U	0.000394 U	NC
	1,3-Dichloropropane	0.000390 U	0.000362 U	NC
	1,4-Dichlorobenzene	0.000393 U	0.000365 U	NC
	1-Methylnaphthalene	0.000982 U	0.000913 U	NC
	2,2-Dichloropropane	0.000434 U	0.000404 U	NC
	2-Butanone	0.000801 U	0.000745 U	NC
	2-Chlorotoluene	0.000488 U	0.000454 U	NC
	2-Hexanone	0.000520 U	0.000484 U	NC
	2-Methylnaphthalene	0.000977 U	0.000909 U	NC
	4-Chlorotoluene	0.000482 U	0.000448 U	NC
	4-Isopropyltoluene	0.000971 U	0.000902 U	NC
	4-Methyl-2-pentanone	0.001056 U	0.000982 U	NC
	Acetone	0.00589 J	0.00256 J	19.7
	Benzene	0.0226	0.0206	2.3
	Bromobenzene	0.000696 U	0.000647 U	NC
	Bromodichloromethane	0.000338 U	0.000314 U	NC
	Bromoform	0.000648 U	0.000603 U	NC
	Bromomethane	0.001479 U	0.001375 U	NC
	Carbon disulfide	0.001132 U	0.001052 U	NC
	Carbon tetrachloride	0.000453 U	0.000421 U	NC
	Chlorobenzene	0.000254 U	0.000236 U	NC
	Chloroethane	0.002501 U	0.002325 U	NC
	Chloroform	0.000515 U	0.000479 U	NC
	Chloromethane	0.000295 U	0.000274 U	NC
	cis-1,2-DCE	0.000661 U	0.000615 U	NC
	cis-1,3-Dichloropropene	0.002501 U	0.002325 U	NC
	Dibromochloromethane	0.000281 U	0.000261 U	NC
	Dibromomethane	0.001419 U	0.001320 U	NC
	Dichlorodifluoromethane	0.001021 U	0.000949 U	NC
	Ethylbenzene	0.0035	0.00328	1.6
	Hexachlorobutadiene	0.000505 U	0.000469 U	NC
	Isopropylbenzene	0.000580 U	0.000539 U	NC
	Methyl tert-butyl ether (MTBE)	0.001049 U	0.000975 U	NC
	Methylene chloride	0.000618 U	0.000721 J	NC
	Naphthalene	0.00103 J	0.000837 J	5.2

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-6 (10-12') Sample Result	SWMU 10 DUP03 Field Duplicate	RPD (%)
	n-Butylbenzene	0.001027 U	0.000955 U	NC
	n-Propylbenzene	0.000638 J	0.000477 J	7.2
	sec-Butylbenzene	0.000925 J	0.000849 J	2.1
	Styrene	0.000414 U	0.000385 U	NC
	tert-Butylbenzene	0.000383 U	0.000356 U	NC
	Tetrachloroethene (PCE)	0.000496 U	0.000461 U	NC
	Toluene	0.0146	0.0139	1.2
	trans-1,2-DCE	0.000404 U	0.000376 U	NC
	trans-1,3-Dichloropropene	0.000327 U	0.000304 U	NC
	Trichloroethene (TCE)	0.000497 U	0.000462 U	NC
	Trichlorofluoromethane	0.000505 U	0.000470 U	NC
	Vinyl chloride	0.000286 U	0.000266 U	NC
	Xylenes, Total	0.0116	0.00984	4.1
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	0.120870 U	0.112566 U	NC
	1,2-Dichlorobenzene	0.112940 U	0.105182 U	NC
	1,3-Dichlorobenzene	0.104874 U	0.097669 U	NC
	1,4-Dichlorobenzene	0.123504 U	0.115020 U	NC
	1-Methylnaphthalene	0.109448 U	0.101929 U	NC
	2,4,5-Trichlorophenol	0.137603 U	0.128149 U	NC
	2,4,6-Trichlorophenol	0.136511 U	0.127132 U	NC
	2,4-Dichlorophenol	0.118076 U	0.109965 U	NC
	2,4-Dimethylphenol	0.092814 U	0.086437 U	NC
	2,4-Dinitrophenol	0.049062 U	0.045692 U	NC
	2,4-Dinitrotoluene	0.105635 U	0.098378 U	NC
	2,6-Dinitrotoluene	0.131249 U	0.122232 U	NC
	2-Chloronaphthalene	0.126505 U	0.117815 U	NC
	2-Chlorophenol	0.110191 U	0.102621 U	NC
	2-Methylnaphthalene	0.108055 U	0.100632 U	NC
	2-Methylphenol	0.118374 U	0.110242 U	NC
	2-Nitroaniline	0.134357 U	0.125127 U	NC
	2-Nitrophenol	0.106127 U	0.098836 U	NC
	3,3´-Dichlorobenzidine	0.090922 U	0.084676 U	NC
	3+4-Methylphenol	0.122378 U	0.113970 U	NC
	3-Nitroaniline	0.113765 U	0.105949 U	NC
	4,6-Dinitro-2-methylphenol	0.064203 U	0.059792 U	NC
	4-Bromophenyl phenyl ether	0.125276 U	0.116669 U	NC
	4-Chloro-3-methylphenol	0.117566 U	0.109489 U	NC
	4-Chloroaniline	0.109198 U	0.101696 U	NC
	4-Chlorophenyl phenyl ether	0.175825 U	0.163746 U	NC
	4-Nitroaniline	0.106056 U	0.098770 U	NC
	4-Nitrophenol	0.101733 U	0.094744 U	NC
	Acenaphthene	0.143884 U	0.133999 U	NC
	Acenaphthylene	0.119613 U	0.111396 U	NC
	Aniline	0.102777 U	0.095717 U	NC
	Anthracene	0.100297 U	0.093407 U	NC
	Azobenzene	0.132366 U	0.123272 U	NC
	Benz(a)anthracene	0.092803 U	0.086427 U	NC
	Benzo(a)pyrene	0.132513 U	0.123409 U	NC
	Benzo(b)fluoranthene	0.112124 U	0.104421 U	NC
	Benzo(g,h,i)perylene	0.134367 U	0.125136 U	NC
	Benzo(k)fluoranthene	0.133438 U	0.124271 U	NC
	Benzoic acid	0.067280 U	0.062658 U	NC
	Benzyl alcohol	0.104881 U	0.097676 U	NC
	Bis(2-chloroethoxy)methane	0.112695 U	0.104953 U	NC
	Bis(2-chloroethyl)ether	0.116670 U	0.108655 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-6 (10-12') Sample Result	SWMU 10 DUP03 Field Duplicate	RPD (%)
	Bis(2-chloroisopropyl)ether	0.090206 U	0.084009 U	NC
	Bis(2-ethylhexyl)phthalate	0.132656 U	0.123542 U	NC
	Butyl benzyl phthalate	0.144149 U	0.134246 U	NC
	Carbazole	0.109971 U	0.102416 U	NC
	Chrysene	0.118564 U	0.110419 U	NC
	Dibenz(a,h)anthracene	0.127923 U	0.119135 U	NC
	Dibenzofuran	0.126280 U	0.117604 U	NC
	Diethyl phthalate	0.134003 U	0.124797 U	NC
	Dimethyl phthalate	0.108666 U	0.101200 U	NC
	Di-n-butyl phthalate	0.133536 U	0.124362 U	NC
	Di-n-octyl phthalate	0.131446 U	0.122416 U	NC
	Fluoranthene	0.143283 U	0.133440 U	NC
	Fluorene	0.160744 U	0.149701 U	NC
	Hexachlorobenzene	0.111443 U	0.103787 U	NC
	Hexachlorobutadiene	0.116817 U	0.108792 U	NC
	Hexachlorocyclopentadiene	0.081898 U	0.076272 U	NC
	Hexachloroethane	0.105103 U	0.097883 U	NC
	Indeno(1,2,3-cd)pyrene	0.134185 U	0.124967 U	NC
	Isophorone	0.125890 U	0.117241 U	NC
	Naphthalene	0.112350 U	0.104631 U	NC
	Nitrobenzene	0.121569 U	0.113217 U	NC
	N-Nitrosodi-n-propylamine	0.122390 U	0.113982 U	NC
	N-Nitrosodiphenylamine	0.105712 U	0.098449 U	NC
	Pentachlorophenol	0.073720 U	0.068656 U	NC
	Phenanthrene	0.123526 U	0.115040 U	NC
	Phenol	0.105819 U	0.098549 U	NC
	Pyrene	0.152390 U	0.141921 U	NC
	Pyridine	0.099219 U	0.092403 U	NC
Metals (mg/kg-dry):	Antimony	1.9 J	1.9 J	0.0
	Arsenic	2.1 J	2.2 J	1.2
	Barium	550	450	5.0
	Beryllium	1	0.95	1.3
	Cadmium	0.033 U	0.03 U	NC
	Chromium	14	13	1.9
	Cobalt	8	7	3.3
	Cyanide	0.296 U	0.28 U	NC
	Hexavalent Chromium	2.368 U	260	NC
	Iron	20000	20000	0.0
	Lead	1.6	1.4	3.3
	Manganese	760	730	1.0
	Mercury	0.0035 U	0.0031 U	NC
	Nickel	16	13	5.2
	Selenium	1.821 U	1.69 U	NC
	Silver	0.035 U	0.03 U	NC
	Vanadium	14	17	4.8
	Zinc	23	21	2.3

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-17 (6-8') Sample Result		SWMU 10 DUP04 Field Duplicate		RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	1300		1100	v	4.2
	Diesel Range Organics (DRO)	7800		3000	v	22.2
	Motor Oil Range Organics (MRO)	ND	U	< 488	u	NC
VOCs (ug/kg-dry)	1,1,1,2-Tetrachloroethane	ND	U	< 0.0526	u	NC
	1,1,1-Trichloroethane	ND	U	< 0.0975	u	NC
	1,1,2,2-Tetrachloroethane	ND	U	< 0.0778	u	NC
	1,1,2-Trichloroethane	ND	U	< 0.0771	u	NC
	1,1-Dichloroethane	ND	U	< 0.2568	u	NC
	1,1-Dichloroethene	ND	U	< 0.0442	u	NC
	1,1-Dichloropropene	ND	U	< 0.0956	u	NC
	1,2,3-Trichlorobenzene	ND	U	< 0.137	u	NC
	1,2,3-Trichloropropane	ND	U	< 0.1077	u	NC
	1,2,4-Trichlorobenzene	ND	U	< 0.11844	u	NC
	1,2,4-Trimethylbenzene	27		17	v	11.4
	1,2-Dibromo-3-chloropropane	ND	U	< 0.1103	u	NC
	1,2-Dibromoethane (EDB)	ND	U	< 0.0511	u	NC
	1,2-Dichlorobenzene	ND	U	< 0.03871	u	NC
	1,2-Dichloroethane (EDC)	ND	U	< 0.2568	u	NC
	1,2-Dichloropropane	ND	U	< 0.0359	u	NC
	1,3,5-Trimethylbenzene	10		6.2	v	11.7
	1,3-Dichlorobenzene	ND	U	< 0.07558	u	NC
	1,3-Dichloropropane	ND	U	< 0.0884	u	NC
	1,4-Dichlorobenzene	ND	U	< 0.07995	u	NC
	1-Methylnaphthalene	48		31	v	10.8
	2,2-Dichloropropane	ND	U	< 0.0934	u	NC
	2-Butanone	ND	U	< 0.4127	u	NC
	2-Chlorotoluene	ND	U	< 0.0725	u	NC
	2-Hexanone	ND	U	< 0.1579	u	NC
	2-Methylnaphthalene	87		60	v	9.2
	4-Chlorotoluene	ND	U	< 0.0485	u	NC
	4-Isopropyltoluene	1.6		1.1	v	9.3
	4-Methyl-2-pentanone	ND	U	< 0.1114	u	NC
	Acetone	ND	U	< 0.4786	u	NC
	Benzene	1.9		1.2	v	11.3
	Bromobenzene	ND	U	< 0.0476	u	NC
	Bromodichloromethane	ND	U	< 0.0525	u	NC
	Bromoform	ND	U	< 0.0516	u	NC
	Bromomethane	ND	U	< 0.1239	u	NC
	Carbon disulfide	ND	U	< 0.4619	u	NC
	Carbon tetrachloride	ND	U	< 0.0625	u	NC
	Chlorobenzene	ND	U	< 0.0494	u	NC
	Chloroethane	ND	U	< 0.4969	u	NC
	Chloroform	ND	U	< 0.0669	u	NC
	Chloromethane	ND	U	< 0.0743	u	NC
	cis-1,2-DCE	ND	U	< 0.0812	u	NC
	cis-1,3-Dichloropropene	ND	U	< 0.0445	u	NC
	Dibromochloromethane	ND	U	< 0.0481	u	NC
	Dibromomethane	ND	U	< 0.0676	u	NC
	Dichlorodifluoromethane	ND	U	< 0.1614	u	NC
	Ethylbenzene	11		8.3	v	7.0
	Hexachlorobutadiene	ND	U	< 0.08913	u	NC
	Isopropylbenzene	3.1		2.3	v	7.4
	Methyl tert-butyl ether (MTBE)	ND	U	< 0.0908	u	NC
	Methylene chloride	ND	U	< 0.2568	u	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-17 (6-8') Sample Result		SWMU 10 DUP04 Field Duplicate		RPD (%)
	Naphthalene	20		13	v	10.6
	n-Butylbenzene	2.8		1.9	J	9.6
	n-Propylbenzene	5.2		3.3	v	11.2
	sec-Butylbenzene	1.8		1	v	14.3
	Styrene	ND	U	< 0.1178	u	NC
	tert-Butylbenzene	ND	U	< 0.0735	u	NC
	Tetrachloroethene (PCE)	ND	U	< 0.0556	u	NC
	Toluene	34		23	v	9.6
	trans-1,2-DCE	ND	U	< 0.0417	u	NC
	trans-1,3-Dichloropropene	ND	U	< 0.1156	u	NC
	Trichloroethene (TCE)	ND	U	< 0.0625	u	NC
	Trichlorofluoromethane	ND	U	< 0.1938	u	NC
	Vinyl chloride	ND	U	< 0.2568	u	NC
	Xylenes, Total	86		65	v	7.0
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	ND	U	< 1.163	u	NC
	1,2-Dichlorobenzene	ND	U	< 1.0867	u	NC
	1,3-Dichlorobenzene	ND	U	< 1.0091	u	NC
	1,4-Dichlorobenzene	ND	U	< 1.1883	u	NC
	1-Methylnaphthalene	76		28	v	23.1
	2,4,5-Trichlorophenol	ND	U	< 1.324	u	NC
	2,4,6-Trichlorophenol	ND	U	< 1.3135	u	NC
	2,4-Dichlorophenol	ND	U	< 1.1361	u	NC
	2,4-Dimethylphenol	36		18	v	16.7
	2,4-Dinitrophenol	ND	U	< 0.4721	u	NC
	2,4-Dinitrotoluene	ND	U	< 1.0164	u	NC
	2,6-Dinitrotoluene	ND	U	< 1.2629	u	NC
	2-Chloronaphthalene	ND	U	< 1.2172	u	NC
	2-Chlorophenol	ND	U	< 1.0602	u	NC
	2-Methylnaphthalene	130		45	v	24.3
	2-Methylphenol	56		29	v	15.9
	2-Nitroaniline	ND	U	< 1.2928	u	NC
	2-Nitrophenol	ND	U	< 1.0211	u	NC
	3,3´-Dichlorobenzidine	ND	U	< 0.8748	u	NC
	3+4-Methylphenol	100		60	v	12.5
	3-Nitroaniline	ND	U	< 1.0946	u	NC
	4,6-Dinitro-2-methylphenol	ND	U	< 0.6178	u	NC
	4-Bromophenyl phenyl ether	ND	U	< 1.2054	u	NC
	4-Chloro-3-methylphenol	ND	U	< 1.1312	u	NC
	4-Chloroaniline	ND	U	< 1.0507	u	NC
	4-Chlorophenyl phenyl ether	ND	U	< 1.6918	u	NC
	4-Nitroaniline	ND	U	< 1.0205	u	NC
	4-Nitrophenol	ND	U	< 0.9789	u	NC
	Acenaphthene	ND	U	< 1.3844	u	NC
	Acenaphthylene	ND	U	< 1.1509	u	NC
	Aniline	ND	U	< 0.9889	u	NC
	Anthracene	ND	U	< 0.965	u	NC
	Azobenzene	ND	U	< 1.2736	u	NC
	Benz(a)anthracene	ND	U	< 0.8929	u	NC
	Benzo(a)pyrene	ND	U	< 1.275	u	NC
	Benzo(b)fluoranthene	ND	U	< 1.0788	u	NC
	Benzo(g,h,i)perylene	ND	U	< 1.2929	u	NC
	Benzo(k)fluoranthene	ND	U	< 1.2839	u	NC
	Benzoic acid	ND	U	< 0.6474	u	NC
	Benzyl alcohol	ND	U	< 1.0092	u	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-17 (6-8') Sample Result		SWMU 10 DUP04 Field Duplicate		RPD (%)
	Bis(2-chloroethoxy)methane	ND	U	< 1.0843	u	NC
	Bis(2-chloroethyl)ether	ND	U	< 1.1226	u	NC
	Bis(2-chloroisopropyl)ether	ND	U	< 0.8679	u	NC
	Bis(2-ethylhexyl)phthalate	ND	U	< 1.2764	u	NC
	Butyl benzyl phthalate	ND	U	< 1.387	u	NC
	Carbazole	ND	U	< 1.0581	u	NC
	Chrysene	ND	U	< 1.1408	u	NC
	Dibenz(a,h)anthracene	ND	U	< 1.2309	u	NC
	Dibenzofuran	ND	U	< 1.215	u	NC
	Diethyl phthalate	ND	U	< 1.2894	u	NC
	Dimethyl phthalate	ND	U	< 1.0456	u	NC
	Di-n-butyl phthalate	ND	U	< 1.2849	u	NC
	Di-n-octyl phthalate	ND	U	< 1.2648	u	NC
	Fluoranthene	ND	U	< 1.3787	u	NC
	Fluorene	7.1		3.2	v	18.9
	Hexachlorobenzene	ND	U	< 1.0723	u	NC
	Hexachlorobutadiene	ND	U	< 1.124	u	NC
	Hexachlorocyclopentadiene	ND	U	< 0.788	u	NC
	Hexachloroethane	ND	U	< 1.0113	u	NC
	Indeno(1,2,3-cd)pyrene	ND	U	< 1.2911	u	NC
	Naphthalene	24		8.8	v	23.2
	Nitrobenzene	ND	U	< 1.1697	u	NC
	N-Nitrosodi-n-propylamine	ND	U	< 1.1776	u	NC
	N-Nitrosodiphenylamine	ND	U	< 1.0171	u	NC
	Pentachlorophenol	ND	U	< 0.7093	u	NC
	Phenanthrene	15		6	v	21.4
	Phenol	52		26	v	16.7
	Pyrene	ND	U	< 1.4663	u	NC
	Pyridine	ND	U	< 0.9547	u	NC
Metals (mg/kg-dry):	Antimony	ND	U	< 1.5264	u	NC
	Arsenic	1.5	J	1.1	J	7.7
	Barium	200		160	v	5.6
	Beryllium	1		1.1	v	2.4
	Cadmium	ND	U	< 0.0322	u	NC
	Chromium	11		11	v	0.0
	Cobalt	5.3		< 2.2887	u	NC
	Cyanide	ND	U	5.4	v	NC
	Hexavalent Chromium	ND	U	< 0.2861	u	NC
	Iron	16000		16000	v	0.0
	Lead	4.4		5.3	v	4.6
	Manganese	210		200	v	1.2
	Mercury	ND	U	< 0.0032	u	NC
	Nickel	9.6		9.5	v	0.3
	Selenium	ND	U	< 1.7774	u	NC
	Silver	ND	U	< 0.0345	u	NC
	Vanadium	19		19	v	0.0
	Zinc	17		17	v	0.0

Notes:

RPD = Relative percent difference; [(difference)/(average)]* 100

NC = Not calculated; RPD values were not calculated for non-detects

ug/kg-dry = micrograms per kilogram dry

mg/kg-dry = milligrams per kilogram

bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

		SWMU 10-22 (2-2.5')		DUP01		
		1605943-004		1605943-006		RPD
	Parameter	Sample Result		Field Duplicate		%
TPH (mg/kg-dry)	Gasoline Range Organics (GRO)	0.6	J	< 0.858	u	NC
	Diesel Range Organics (DRO)	< 4.5	u	150	v	NC
	Motor Oil Range Organics (MRO)	< 62	u	310	v	NC
VOCs (mg/kg-dry)	1,1,1,2-Tetrachloroethane	< 0.0017	u	< 0.0003	u	NC
	1,1,1-Trichloroethane	< 0.0017	u	< 0.0002	u	NC
	1,1,2,2-Tetrachloroethane	< 0.0017	u	< 0.0004	u	NC
	1,1,2-Trichloroethane	< 0.0017	u	< 0.0016	u	NC
	1,1-Dichloroethane	< 0.0017	u	< 0.0004	u	NC
	1,1-Dichloroethene	< 0.0003	u	< 0.0003	u	NC
	1,1-Dichloropropene	< 0.0017	u	< 0.0003	u	NC
	1,2,3-Trichlorobenzene	< 0.0004	u	< 0.0006	u	NC
	1,2,3-Trichloropropane	< 0.0017	u	< 0.0006	u	NC
	1,2,4-Trichlorobenzene	< 0.0005	u	< 0.00059	u	NC
	1,2,4-Trimethylbenzene	0.0003	J	0.000972	J	26.4
	1,2-Dibromo-3-chloropropane	< 0.0002	u	< 0.0005	u	NC
	1,2-Dibromoethane (EDB)	< 0.0017	u	< 0.0002	u	NC
	1,2-Dichlorobenzene	< 0.0002	u	< 0.00035	u	NC
	1,2-Dichloroethane (EDC)	< 0.0017	u	< 0.0004	u	NC
	1,2-Dichloropropane	< 0.0017	u	< 0.0003	u	NC
	1,3,5-Trimethylbenzene	< 0.0003	u	0.000422	J	NC
	1,3-Dichlorobenzene	< 0.0003	u	< 0.00027	u	NC
	1,3-Dichloropropane	< 0.0017	u	< 0.0002	u	NC
	1,4-Dichlorobenzene	< 0.0003	u	< 0.00025	u	NC
	1-Methylnaphthalene	< 0.0002	u	< 0.00062	u	NC
	2,2-Dichloropropane	< 0.0002	u	< 0.0003	u	NC
	2-Butanone	< 0.0006	u	0.00253	J	NC
	2-Chlorotoluene	< 0.0003	u	< 0.0003	u	NC
	2-Hexanone	< 0.0004	u	0.000653	J	NC
	2-Methylnaphthalene	< 0.0004	u	< 0.00062	u	NC
	4-Chlorotoluene	< 0.0003	u	< 0.0003	u	NC
	4-Isopropyltoluene	< 0.0003	u	< 0.0006	u	NC
	4-Methyl-2-pentanone	< 0.0033	u	< 0.0007	u	NC
	Acetone	0.0117	v	0.0166	v	8.7
	Benzene	< 0.0017	u	0.00104	J	NC
	Bromobenzene	< 0.0002	u	< 0.0004	u	NC
	Bromodichloromethane	< 0.0017	u	< 0.0002	u	NC
	Bromoform	< 0.0017	u	< 0.0004	u	NC
	Bromomethane	< 0.0003	u	< 0.0009	u	NC
	Carbon disulfide	< 0.0006	u	< 0.0007	u	NC
	Carbon tetrachloride	< 0.0017	u	< 0.0003	u	NC
	Chlorobenzene	< 0.0002	u	< 0.0002	u	NC
	Chloroethane	< 0.0003	u	< 0.0016	u	NC
	Chloroform	< 0.0017	u	< 0.0003	u	NC
	Chloromethane	< 0.0004	u	< 0.0002	u	NC
	cis-1,2-DCE	< 0.0017	u	< 0.0004	u	NC
	cis-1,3-Dichloropropene	< 0.0017	u	< 0.0016	u	NC
	Dibromochloromethane	< 0.0017	u	< 0.0002	u	NC
	Dibromomethane	< 0.0017	u	< 0.0009	u	NC
	Dichlorodifluoromethane	< 0.001	u	< 0.0007	u	NC
	Ethylbenzene	< 0.0002	u	0.000638	J	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

		SWMU 10-22 (2-2.5')		DUP01		
		1605943-004		1605943-006		RPD
	Parameter	Sample Result		Field Duplicate		%
	Hexachlorobutadiene	< 0.0004	u	< 0.00032	u	NC
	Isopropylbenzene	< 0.0002	u	< 0.0004	u	NC
	Methyl tert-butyl ether (MTBE)	< 0.0003	u	< 0.0007	u	NC
	Methylene chloride	< 0.0017	u	0.00051	J	NC
	Naphthalene	< 0.0017	u	< 0.00052	u	NC
	n-Butylbenzene	< 0.0004	u	< 0.0007	u	NC
	n-Propylbenzene	< 0.0003	u	< 0.0003	u	NC
	sec-Butylbenzene	< 0.0003	u	0.000534	J	NC
	Styrene	< 0.0002	u	< 0.0003	u	NC
	tert-Butylbenzene	< 0.0002	u	< 0.0002	u	NC
	Tetrachloroethene (PCE)	< 0.0002	u	< 0.0003	u	NC
	Toluene	0.0012	J	0.00232	v	15.9
	trans-1,2-DCE	< 0.0002	u	< 0.0003	u	NC
	trans-1,3-Dichloropropene	< 0.0002	u	< 0.0002	u	NC
	Trichloroethene (TCE)	< 0.0017	u	< 0.0003	u	NC
	Trichlorofluoromethane	< 0.0002	u	< 0.0003	u	NC
	Vinyl chloride	< 0.0004	u	< 0.0002	u	NC
	Xylenes, Total	< 0.0007	u	0.00171	v	NC
SVOCs (mg/kg-dry)	1,2,4-Trichlorobenzene	< 0.13	u	< 2.8155	u	NC
	1,2-Dichlorobenzene	< 0.094	u	< 2.6308	u	NC
	1,3-Dichlorobenzene	< 0.095	u	< 2.4429	u	NC
	1,4-Dichlorobenzene	< 0.1	u	< 2.8768	u	NC
	1-Methylnaphthalene	< 0.12	u	< 2.5494	u	NC
	2,4,5-Trichlorophenol	< 0.12	u	< 3.2052	u	NC
	2,4,6-Trichlorophenol	< 0.1	u	< 3.1798	u	NC
	2,4-Dichlorophenol	< 0.11	u	< 2.7504	u	NC
	2,4-Dimethylphenol	< 0.13	u	< 2.1619	u	NC
	2,4-Dinitrophenol	< 0.081	u	< 1.1428	u	NC
	2,4-Dinitrotoluene	< 0.11	u	< 2.4606	u	NC
	2,6-Dinitrotoluene	< 0.13	u	< 3.0572	u	NC
	2-Chloronaphthalene	< 0.097	u	< 2.9467	u	NC
	2-Chlorophenol	< 0.097	u	< 2.5667	u	NC
	2-Methylnaphthalene	< 0.15	u	< 2.517	u	NC
	'2-Methylphenol (cresol,o-)	< 0.1	u	< 2.7573	u	NC
	2-Nitroaniline	< 0.13	u	< 3.1296	u	NC
	2-Nitrophenol	< 0.12	u	< 2.4721	u	NC
	3,3´-Dichlorobenzidine	< 0.09	u	< 2.1179	u	NC
	3+4-Methylphenol	< 0.089	u	< 2.8506	u	NC
	3-Nitroaniline	< 0.11	u	< 2.65	u	NC
	4,6-Dinitro-2-methylphenol	< 0.074	u	< 1.4955	u	NC
	4-Bromophenyl phenyl ether	< 0.12	u	< 2.9181	u	NC
	4-Chloro-3-methylphenol	< 0.15	u	< 2.7385	u	NC
	4-Chloroaniline	< 0.13	u	< 2.5436	u	NC
	4-Chlorophenyl phenyl ether	< 0.14	u	< 4.0956	u	NC
	4-Nitroaniline	< 0.086	u	< 2.4704	u	NC
	4-Nitrophenol	< 0.093	u	< 2.3697	u	NC
	Acenaphthene	< 0.11	u	< 3.3515	u	NC
	Acenaphthylene	< 0.1	u	< 2.7862	u	NC
	Aniline	< 0.12	u	< 2.394	u	NC
	Anthracene	< 0.081	u	< 2.3363	u	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

		SWMU 10-22 (2-2.5')		DUP01		
		1605943-004		1605943-006		RPD
	Parameter	Sample Result		Field Duplicate		%
	Azobenzene	< 0.15	u	< 3.0833	u	NC
	Benz(a)anthracene	< 0.11	u	< 2.1617	u	NC
	Benzo(a)pyrene	< 0.093	u	< 3.0867	u	NC
	Benzo(b)fluoranthene	< 0.11	u	< 2.6117	u	NC
	Benzo(g,h,i)perylene	< 0.11	u	< 3.1299	u	NC
	Benzo(k)fluoranthene	< 0.11	u	< 3.1082	u	NC
	Benzoic acid	< 0.1	u	< 1.5672	u	NC
	Benzyl alcohol	< 0.096	u	< 2.443	u	NC
	Bis(2-chloroethoxy)methane	< 0.13	u	< 2.6251	u	NC
	Bis(2-chloroethyl)ether	< 0.09	u	< 2.7176	u	NC
	Bis(2-chloroisopropyl)ether	< 0.11	u	< 2.1012	u	NC
	Bis(2-ethylhexyl)phthalate	0.19	J	< 3.09	u	NC
	Butyl benzyl phthalate	< 0.11	u	< 3.3577	u	NC
	Carbazole	< 0.083	u	< 2.5616	u	NC
	Chrysene	< 0.1	u	< 2.7618	u	NC
	Dibenz(a,h)anthracene	< 0.099	u	< 2.9798	u	NC
	Dibenzofuran	< 0.12	u	< 2.9415	u	NC
	Diethyl phthalate	< 0.12	u	< 3.1214	u	NC
	Dimethyl phthalate	< 0.12	u	< 2.5312	u	NC
	Di-n-butyl phthalate	0.12	J	< 3.1105	u	NC
	Di-n-octyl phthalate	< 0.1	u	< 3.0618	u	NC
	Fluoranthene	< 0.071	u	< 3.3375	u	NC
	Fluorene	< 0.11	u	< 3.7443	u	NC
	Hexachlorobenzene	< 0.097	u	< 2.5959	u	NC
	Hexachlorobutadiene	< 0.14	u	< 2.7211	u	NC
	Hexachlorocyclopentadiene	< 0.14	u	< 1.9077	u	NC
	Hexachloroethane	< 0.11	u	< 2.4482	u	NC
	Indeno(1,2,3-cd)pyrene	< 0.096	u	< 3.1256	u	NC
	Naphthalene	< 0.12	u	< 2.617	u	NC
	Nitrobenzene	< 0.13	u	< 2.8318	u	NC
	N-Nitrosodi-n-propylamine	< 0.12	u	< 2.8509	u	NC
	N-Nitrosodiphenylamine	< 0.12	u	< 2.4624	u	NC
	Pentachlorophenol	< 0.079	u	< 1.7172	u	NC
	Phenanthrene	< 0.083	u	< 2.8773	u	NC
	Phenol	< 0.092	u	< 2.4649	u	NC
	Pyrene	< 0.093	u	< 3.5497	u	NC
	Pyridine	< 0.097	u	< 2.3111	u	NC
Metals (mg/kg-dry)	Antimony	< 7.3	u	< 1.4517	u	NC
	Arsenic	2.4	J	2.7	J	2.9
	Barium	290	v	380	v	6.7
	Beryllium	0.89	v	0.59	v	10.1
	Cadmium	< 0.0782	u	< 0.0306	u	NC
	Chromium	12	v	16	v	7.1
	Hexavalent Chromium	< 0.64	u	3.4	v	NC
	Cobalt	4.9	v	< 0.2828	u	NC
	Cyanide	0.04	J	< 2.2626	u	NC
	Iron	14000	v	9100	v	10.6
	Lead	4.3	v	3.6	v	4.4
	Manganese	570	v	490	v	3.8
	Mercury	0.044	v	0.035	J	5.7

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-22 (2-2.5') 1605943-004 Sample Result		DUP01 1605943-006 Field Duplicate		RPD %
	Nickel	8.6	v	5.6	v	10.6
	Selenium	< 1.346	u	< 1.6905	u	NC
	Silver	< 0.0391	u	< 0.0328	u	NC
	Vanadium	18	v	21	v	3.8
	Zinc	20	v	24	v	4.5

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-25 (2-2.5') 1609B57-007 Sample Result		SWMU 10 DUP01 1609B57-010 Field Duplicate		RPD %
TPH (mg/kg-dry)	Gasoline Range Organics (GRO)	730	v	510	Z	8.9
	Diesel Range Organics (DRO)	790	v	3400	v	31.1
	Motor Oil Range Organics (MRO)	100	v	< 560	u	NC
VOCs (mg/kg-dry)	1,1,1,2-Tetrachloroethane	< 0.2042	u	< 0.18	u	NC
	1,1,1-Trichloroethane	< 0.1302	u	< 0.11	u	NC
	1,1,2,2-Tetrachloroethane	< 0.3458	u	< 0.3	u	NC
	1,1,2-Trichloroethane	< 0.2515	u	< 0.22	u	NC
	1,1-Dichloroethane	< 0.1153	u	< 0.1	u	NC
	1,1-Dichloroethene	< 0.6989	u	< 0.61	u	NC
	1,1-Dichloropropene	< 0.1693	u	< 0.15	u	NC
	1,2,3-Trichlorobenzene	< 0.3193	u	< 0.28	u	NC
	1,2,3-Trichloropropane	< 0.3691	u	< 0.32	u	NC
	1,2,4-Trichlorobenzene	< 0.2282	u	< 0.2	u	NC
	1,2,4-Trimethylbenzene	5.8	v	5.8	Z	0.0
	1,2-Dibromo-3-chloropropane	< 0.6536	u	< 0.57	u	NC
	1,2-Dibromoethane (EDB)	< 0.1518	u	< 0.13	u	NC
	1,2-Dichlorobenzene	< 0.1862	u	< 0.16	u	NC
	1,2-Dichloroethane (EDC)	< 0.5564	u	< 0.48	u	NC
	1,2-Dichloropropane	< 0.179	u	< 0.16	u	NC
	1,3,5-Trimethylbenzene	2.6	v	2.5	Z	1.0
	1,3-Dichlorobenzene	< 0.175	u	< 0.15	u	NC
	1,3-Dichloropropane	< 0.2421	u	< 0.21	u	NC
	1,4-Dichlorobenzene	< 0.2644	u	< 0.23	u	NC
	1-Methylnaphthalene	13	v	13	Z	0.0
	2,2-Dichloropropane	< 0.1222	u	< 0.11	u	NC
	2-Butanone	< 1.2194	u	< 1.1	u	NC
	2-Chlorotoluene	< 0.1574	u	< 0.14	u	NC
	2-Hexanone	< 1.1611	u	< 1	u	NC
	2-Methylnaphthalene	16	v	18	Z	2.9
	4-Chlorotoluene	< 0.1887	u	< 0.16	u	NC
	4-Isopropyltoluene	0.61	J	0.59	J	0.8
	4-Methyl-2-pentanone	< 0.6219	u	< 0.54	u	NC
	Acetone	< 2.7608	u	< 2.4	u	NC
	Benzene	< 0.8538	u	< 0.74	u	NC
	Bromobenzene	< 0.172	u	< 0.15	u	NC
	Bromodichloromethane	< 0.1243	u	< 0.11	u	NC
	Bromoform	< 0.2599	u	< 0.23	u	NC
	Bromomethane	< 0.7861	u	0.69	J	NC
	Carbon disulfide	< 0.7045	u	< 0.61	u	NC
	Carbon tetrachloride	< 0.1401	u	< 0.12	u	NC
	Chlorobenzene	< 0.1737	u	< 0.15	u	NC
	Chloroethane	< 0.4259	u	< 0.37	u	NC
	Chloroform	< 0.161	u	< 0.14	u	NC
	Chloromethane	< 0.1899	u	< 0.17	u	NC
	cis-1,2-DCE	< 0.1241	u	< 0.11	u	NC
	cis-1,3-Dichloropropene	< 0.1967	u	< 0.17	u	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

		SWMU 10-25 (2-2.5')		SWMU 10 DUP01		
		1609B57-007		1609B57-010		RPD
	Parameter	Sample Result		Field Duplicate		%
	Dibromochloromethane	< 0.1928	u	< 0.17	u	NC
	Dibromomethane	< 0.1848	u	< 0.16	u	NC
	Dichlorodifluoromethane	< 0.6602	u	< 0.57	u	NC
	Ethylbenzene	1	J	0.99	J	0.3
	Hexachlorobutadiene	< 0.2609	u	< 0.23	u	NC
	Isopropylbenzene	0.54	J	0.5	J	1.9
	Methyl tert-butyl ether (MTBE)	< 0.6706	u	< 0.58	u	NC
	Methylene chloride	< 0.6153	u	< 0.54	u	NC
	Naphthalene	3.8	J	4.1	Z	1.9
	n-Butylbenzene	0.95	J	0.87	J	2.2
	n-Propylbenzene	0.93	J	0.98	J	1.3
	sec-Butylbenzene	0.74	J	0.67	J	2.5
	Styrene	< 0.1905	u	< 0.17	u	NC
	tert-Butylbenzene	< 0.1769	u	< 0.15	u	NC
	Tetrachloroethene (PCE)	< 0.177	u	< 0.15	u	NC
	Toluene	0.29	J	0.2	J	9.2
	trans-1,2-DCE	< 0.5973	u	< 0.52	u	NC
	trans-1,3-Dichloropropene	< 0.3123	u	< 0.27	u	NC
	Trichloroethene (TCE)	< 0.2288	u	< 0.2	u	NC
	Trichlorofluoromethane	< 0.1596	u	< 0.14	u	NC
	Vinyl chloride	< 0.1745	u	< 0.15	u	NC
	Xylenes, Total	10	v	9.9	Z	0.3
SVOCs (mg/kg-dry)	1,2,4-Trichlorobenzene	< 0.1232	u	< 1.1742	u	NC
	1,2-Dichlorobenzene	< 0.0872	u	< 0.8314	u	NC
	1,3-Dichlorobenzene	< 0.088	u	< 0.839	u	NC
	1,4-Dichlorobenzene	< 0.0963	u	< 0.9177	u	NC
	1-Methylnaphthalene	0.82	v	14	Z	**44.5**
	2,4,5-Trichlorophenol	< 0.114	u	< 1.0863	u	NC
	2,4,6-Trichlorophenol	< 0.0945	u	< 0.9006	u	NC
	2,4-Dichlorophenol	< 0.1063	u	< 1.0126	u	NC
	2,4-Dimethylphenol	0.17	J	< 1.1788	u	NC
	2,4-Dinitrophenol	< 0.0755	u	< 0.72	u	NC
	2,4-Dinitrotoluene	< 0.1017	u	< 0.9694	u	NC
	2,6-Dinitrotoluene	< 0.1205	u	< 1.1486	u	NC
	2-Chloronaphthalene	< 0.0897	u	< 0.8546	u	NC
	2-Chlorophenol	< 0.0898	u	< 0.8557	u	NC
	2-Methylnaphthalene	1.4	v	24	Z	**44.5**
	'2-Methylphenol (cresol,o-)	0.53	v	< 0.9073	u	NC
	2-Nitroaniline	< 0.1228	u	< 1.1699	u	NC
	2-Nitrophenol	< 0.113	u	< 1.0769	u	NC
	3,3´-Dichlorobenzidine	< 0.0839	u	< 0.7992	u	NC
	3+4-Methylphenol	< 0.0825	u	< 0.7858	u	NC
	3-Nitroaniline	< 0.1004	u	< 0.9569	u	NC
	4,6-Dinitro-2-methylphenol	< 0.0689	u	< 0.6564	u	NC
	4-Bromophenyl phenyl ether	< 0.1089	u	< 1.0377	u	NC
	4-Chloro-3-methylphenol	< 0.1359	u	< 1.2951	u	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-25 (2-2.5') 1609B57-007 Sample Result		SWMU 10 DUP01 1609B57-010 Field Duplicate		RPD %
	4-Chloroaniline	< 0.1238	u	< 1.1801	u	NC
	4-Chlorophenyl phenyl ether	< 0.1301	u	< 1.2402	u	NC
	4-Nitroaniline	< 0.0803	u	< 0.7654	u	NC
	4-Nitrophenol	< 0.0868	u	< 0.8269	u	NC
	Acenaphthene	< 0.0977	u	< 0.9308	u	NC
	Acenaphthylene	< 0.0927	u	< 0.8833	u	NC
	Aniline	< 0.1076	u	< 1.0256	u	NC
	Anthracene	< 0.0756	u	< 0.7205	u	NC
	Azobenzene	< 0.1388	u	< 1.3227	u	NC
	Benz(a)anthracene	< 0.0981	u	< 0.9344	u	NC
	Benzo(a)pyrene	< 0.0862	u	< 0.8219	u	NC
	Benzo(b)fluoranthene	< 0.1029	u	< 0.9803	u	NC
	Benzo(g,h,i)perylene	< 0.1004	u	< 0.9571	u	NC
	Benzo(k)fluoranthene	< 0.1003	u	< 0.9562	u	NC
	Benzoic acid	0.21	J	2.7	J	42.8
	Benzyl alcohol	< 0.0892	u	< 0.8497	u	NC
	Bis(2-chloroethoxy)methane	< 0.1236	u	< 1.1778	u	NC
	Bis(2-chloroethyl)ether	< 0.0837	u	< 0.7976	u	NC
	Bis(2-chloroisopropyl)ether	< 0.1017	u	< 0.9692	u	NC
	Bis(2-ethylhexyl)phthalate	0.22	J	< 0.8844	u	NC
	Butyl benzyl phthalate	< 0.1008	u	< 0.961	u	NC
	Carbazole	< 0.0769	u	< 0.733	u	NC
	Chrysene	< 0.097	u	< 0.9243	u	NC
	Dibenz(a,h)anthracene	< 0.0921	u	< 0.8777	u	NC
	Dibenzofuran	< 0.1146	u	< 1.0917	u	NC
	Diethyl phthalate	0.28	v	< 1.1007	u	NC
	Dimethyl phthalate	< 0.1114	u	< 1.0618	u	NC
	Di-n-butyl phthalate	0.35	J	< 0.8117	u	NC
	Di-n-octyl phthalate	< 0.0972	u	< 0.9259	u	NC
	Fluoranthene	< 0.0656	u	< 0.6252	u	NC
	Fluorene	0.19	J	2.8	Z	43.6
	Hexachlorobenzene	< 0.0898	u	< 0.8559	u	NC
	Hexachlorobutadiene	< 0.1284	u	< 1.2232	u	NC
	Hexachlorocyclopentadiene	< 0.1302	u	< 1.241	u	NC
	Hexachloroethane	< 0.0979	u	< 0.9325	u	NC
	Indeno(1,2,3-cd)pyrene	< 0.0889	u	< 0.8476	u	NC
	Naphthalene	0.28	v	< 1.2	u	NC
	Nitrobenzene	< 0.1175	u	4.7	Z	NC
	N-Nitrosodi-n-propylamine	< 0.1095	u	< 1.1201	u	NC
	N-Nitrosodiphenylamine	< 0.1112	u	< 1.0432	u	NC
	Pentachlorophenol	< 0.0732	u	< 1.06	u	NC
	Phenanthrene	0.39	v	< 0.6976	u	NC
	Phenol	< 0.0858	u	5.1	Z	NC
	Pyrene	< 0.0861	u	< 0.8175	u	NC
	Pyridine	< 0.0903	u	< 0.8203	u	NC
Metals (mg/kg-dry)	Antimony	< 1.1611	u	< 0.8604	u	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-25 (2-2.5') 1609B57-007 Sample Result		SWMU 10 DUP01 1609B57-010 Field Duplicate		RPD %
	Arsenic	< 1.0254	u	< 0.9931	u	NC
	Barium	96	v	130	v	7.5
	Beryllium	0.58	v	0.69	v	4.3
	Cadmium	< 0.0732	u	< 0.0709	u	NC
	Chromium	7.2	v	7.7	v	1.7
	Hexavalent Chromium	<0.1	u	6.1	v	NC
	Cobalt	0.12	J	0.063	J	15.6
	Cyanide	0.3	J	0.43	J	8.9
	Iron	12000	v	13000	v	2.0
	Lead	2.1	v	3.4	v	11.8
	Manganese	500	v	970	v	16.0
	Mercury	0.0031	J	0.0053	J	13.1
	Nickel	5.7	v	6.7	v	4.0
	Selenium	< 2.0993	u	< 2.0332	u	NC
	Silver	< 0.0722	u	< 0.07	u	NC
	Vanadium	15	v	17	v	3.1
	Zinc	11	v	16	v	9.3

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-15-GW Sample Result	SWMU 10 DUP01GW Field Duplicate	RPD (%)
TPH (mg/l):	Gasoline Range Organics (GRO)	0.78	0.73	1.7
	Diesel Range Organics (DRO)	1	1.1	2.4
	Motor Oil Range Organics (MRO)	5 U	5 U	NC
VOCs (ug/l)	1,1,1,2-Tetrachloroethane	0.22094 U	0.11047 U	NC
	1,1,1-Trichloroethane	0.15544 U	0.07772 U	NC
	1,1,2,2-Tetrachloroethane	0.35915 U	0.17957 U	NC
	1,1,2-Trichloroethane	0.15763 U	0.07881 U	NC
	1,1-Dichloroethane	0.8 U	0.4 U	NC
	1,1-Dichloroethene	0.19865 U	0.09932 U	NC
	1,1-Dichloropropene	0.23043 U	0.11521 U	NC
	1,2,3-Trichlorobenzene	0.53278 U	0.26639 U	NC
	1,2,3-Trichloropropane	0.31673 U	0.15836 U	NC
	1,2,4-Trichlorobenzene	0.56547 U	0.28273 U	NC
	1,2,4-Trimethylbenzene	0.31893 U	0.15946 U	NC
	1,2-Dibromo-3-chloropropane	0.27209 U	0.13604 U	NC
	1,2-Dibromoethane (EDB)	0.26750 U	0.13375 U	NC
	1,2-Dichlorobenzene	0.23661 U	0.11831 U	NC
	1,2-Dichloroethane (EDC)	0.35297 U	0.17648 U	NC
	1,2-Dichloropropane	0.30239 U	0.15119 U	NC
	1,3,5-Trimethylbenzene	0.24576 U	0.12288 U	NC
	1,3-Dichlorobenzene	0.18698 U	0.09349 U	NC
	1,3-Dichloropropane	0.34440 U	0.17220 U	NC
	1,4-Dichlorobenzene	0.33168 U	0.16584 U	NC
	1-Methylnaphthalene	1.07678 U	0.53839 U	NC
	2,2-Dichloropropane	0.30330 U	0.15165 U	NC
	Benzene	0.51 J	0.4 J	6.0
	2-Butanone	2.9 J	2.9 J	0.0
	2-Chlorotoluene	0.15813 U	0.07906 U	NC
	2-Hexanone	0.95322 U	0.47661 U	NC
	2-Methylnaphthalene	1.18893 U	0.59446 U	NC
	4-Chlorotoluene	0.29868 U	0.14934 U	NC
	4-Isopropyltoluene	0.37722 U	0.18861 U	NC
	4-Methyl-2-pentanone	0.51323 U	0.25661 U	NC
	Acetone	9.7 J	16	12.3
	Bromobenzene	0.21555 U	0.10777 U	NC
	Bromodichloromethane	0.17935 U	0.08968 U	NC
	Bromoform	0.32470 U	0.16235 U	NC
	Bromomethane	2.32245 U	1.16123 U	NC
	Carbon disulfide	1.34646 U	0.67323 U	NC
	Carbon Tetrachloride	0.15607 U	0.07803 U	NC
	Chlorobenzene	0.18680 U	0.09340 U	NC
	Chloroethane	0.20937 U	0.10468 U	NC
	Chloroform	0.42972 U	0.21486 U	NC
	Chloromethane	0.34737 U	0.17368 U	NC
	cis-1,2-DCE	0.16120 U	0.08060 U	NC
	cis-1,3-Dichloropropene	0.26617 U	0.13308 U	NC
	Dibromochloromethane	0.19361 U	0.09681 U	NC
	Dibromomethane	0.46872 U	0.23436 U	NC
	Dichlorodifluoromethane	1.38481 U	0.69241 U	NC
	Ethylbenzene	0.20214 U	0.10107 U	NC
	Hexachlorobutadiene	0.50280 U	0.25140 U	NC
	Isopropylbenzene	0.30395 U	0.15197 U	NC
	Methyl tert-butyl ether (MTBE)	150	150	0.0
	Methylene Chloride	0.72072 U	0.36036 U	NC
	Naphthalene	0.43587 U	0.21793 U	NC
	n-Butylbenzene	0.49093 U	0.24546 U	NC
	n-Propylbenzene	0.32634 U	0.16317 U	NC
	sec-Butylbenzene	0.45720 U	0.22860 U	NC
	Styrene	0.21131 U	0.10566 U	NC
	tert-Butylbenzene	0.25893 U	0.12947 U	NC
	Tetrachloroethene (PCE)	0.32095 U	0.16047 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-15-GW Sample Result		SWMU 10 DUP01GW Field Duplicate		RPD (%)
	Toluene	0.21693	U	0.10847	U	NC
	trans-1,2-DCE	0.18810	U	0.09405	U	NC
	trans-1,3-Dichloropropene	0.22617	U	0.11309	U	NC
	Trichloroethene (TCE)	0.32669	U	0.16334	U	NC
	Trichlorofluoromethane	0.25403	U	0.12701	U	NC
	Vinyl chloride	0.25082	U	0.12541	U	NC
	Xylenes, Total	0.56497	U	0.28248	U	NC
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	1.99336	U	1.99336	U	NC
	1,2-Dichlorobenzene	1.89877	U	1.89877	U	NC
	1,3-Dichlorobenzene	1.69038	U	1.69038	U	NC
	1,4-Dichlorobenzene	1.23419	U	1.23419	U	NC
	1-Methylnaphthalene	1.80147	U	1.80147	U	NC
	2,4,5-Trichlorophenol	1.61671	U	1.61671	U	NC
	2,4,6-Trichlorophenol	1.25834	U	1.25834	U	NC
	2,4-Dichlorophenol	1.39496	U	1.39496	U	NC
	2,4-Dimethylphenol	1.85381	U	1.85381	U	NC
	2,4-Dinitrophenol	1.06974	U	1.06974	U	NC
	2,4-Dinitrotoluene	1.43393	U	1.43393	U	NC
	2,6-Dinitrotoluene	1.49035	U	1.49035	U	NC
	2-Chloronaphthalene	1.71573	U	1.71573	U	NC
	2-Chlorophenol	1.20402	U	1.20402	U	NC
	2-Methylnaphthalene	2.24599	U	2.24599	U	NC
	2-Methylphenol	1.24572	U	1.24572	U	NC
	2-Nitroaniline	1.79467	U	1.79467	U	NC
	2-Nitrophenol	1.23136	U	1.23136	U	NC
	3,3´-Dichlorobenzidine	2.60844	U	2.60844	U	NC
	3+4-Methylphenol	1.47532	U	1.47532	U	NC
	3-Nitroaniline	1.47977	U	1.47977	U	NC
	4,6-Dinitro-2-methylphenol	1.36786	U	1.36786	U	NC
	4-Bromophenyl phenyl ether	1.40872	U	1.40872	U	NC
	4-Chloro-3-methylphenol	1.35070	U	1.35070	U	NC
	4-Chloroaniline	1.87394	U	1.87394	U	NC
	4-Chlorophenyl phenyl ether	2.01318	U	2.01318	U	NC
	4-Nitroaniline	1.24171	U	1.24171	U	NC
	4-Nitrophenol	1.40498	U	1.40498	U	NC
	Acenaphthene	1.88470	U	1.88470	U	NC
	Acenaphthylene	1.86589	U	1.86589	U	NC
	Aniline	1.54599	U	1.54599	U	NC
	Anthracene	1.60486	U	1.60486	U	NC
	Azobenzene	2.00531	U	2.00531	U	NC
	Benz(a)anthracene	2.50627	U	2.50627	U	NC
	Benzo(a)pyrene	2.72398	U	2.72398	U	NC
	Benzo(b)fluoranthene	2.40284	U	2.40284	U	NC
	Benzo(g,h,i)perylene	3.12517	U	3.12517	U	NC
	Benzo(k)fluoranthene	2.51488	U	2.51488	U	NC
	Benzoic acid	1.02557	U	1.02557	U	NC
	Benzyl alcohol	1.17187	U	1.17187	U	NC
	Bis(2-chloroethoxy)methane	1.80486	U	1.80486	U	NC
	Bis(2-chloroethyl)ether	1.77363	U	1.77363	U	NC
	Bis(2-chloroisopropyl)ether	2.05946	U	2.05946	U	NC
	Bis(2-ethylhexyl)phthalate	3.32558	U	3.32558	U	NC
	Butyl benzyl phthalate	2.37012	U	2.37012	U	NC
	Carbazole	1.49023	U	1.49023	U	NC
	Chrysene	2.15442	U	2.15442	U	NC
	Dibenz(a,h)anthracene	3.26832	U	3.26832	U	NC
	Dibenzofuran	1.90194	U	1.90194	U	NC
	Diethyl phthalate	1.67338	U	1.67338	U	NC
	Dimethyl phthalate	1.99487	U	1.99487	U	NC
	Di-n-butyl phthalate	2.10312	U	2.10312	U	NC
	Di-n-octyl phthalate	1.93926	U	1.93926	U	NC
	Fluoranthene	1.47557	U	1.47557	U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-15-GW Sample Result		SWMU 10 DUP01GW Field Duplicate		RPD (%)
	Fluorene	1.67191	U	1.67191	U	NC
	Hexachlorobenzene	2.02231	U	2.02231	U	NC
	Hexachlorobutadiene	1.94908	U	1.94908	U	NC
	Hexachlorocyclopentadiene	1.47091	U	1.47091	U	NC
	Hexachloroethane	1.61223	U	1.61223	U	NC
	Indeno(1,2,3-cd)pyrene	2.45952	U	2.45952	U	NC
	Isophorone	1.95246	U	1.95246	U	NC
	Naphthalene	1.83350	U	1.83350	U	NC
	Nitrobenzene	1.49388	U	1.49388	U	NC
	N-Nitrosodimethylamine	1.41684	U	1.41684	U	NC
	N-Nitrosodi-n-propylamine	2.03650	U	2.03650	U	NC
	N-Nitrosodiphenylamine	2.46700	U	2.46700	U	NC
	Pentachlorophenol	1.13741	U	1.13741	U	NC
	Phenanthrene	1.99666	U	1.99666	U	NC
	Phenol	1.08528	U	1.08528	U	NC
	Pyrene	2.31812	U	2.31812	U	NC
	Pyridine	1.67388	U	1.67388	U	NC
Water Quality (mg/l)	Chloride	2300		2400		1.1
	Fluoride	0.55		0.55		0.0
	Sulfate	440		470		1.6
Dissolved Metals (mg/l):	Antimony (d)	0.001429741	U	0.001	U	NC
	Arsenic (d)	0.011	J	0.011	J	0.0
	Barium (d)	0.22		0.22		0.0
	Beryllium (d)	0.000312692	U	0.00033	J	NC
	Cadmium (d)	0.000966229	U	0.001	U	NC
	Chromium (d)	0.0094		0.0094		0.0
	Cobalt (d)	0.023		0.023		0.0
	Iron (d)	0.61		2.2		**28.3**
	Lead (d)	0.0026	J	0.0039	J	10.0
	Manganese (d)	2.4		2.5		1.0
	Nickel (d)	0.65		0.66		0.4
	Selenium (d)	0.02		0.023		3.5
	Silver (d)	0.00121688	U	0.001	U	NC
	Vanadium (d)	0.0057	J	0.0076	J	7.1
	Zinc	0.15		0.036		**30.6**
Total Metals (mg/l):	Antimony	0.00215761	U	0.002	U	NC
	Arsenic	0.012		0.012		0.0
	Barium	0.37		0.31		4.4
	Beryllium	0.0015	J	0.0014	J	1.7
	Cadmium	0.000966229	U	0.001	U	NC
	Chromium	0.0062		0.0059	J	1.2
	Chromium, Hexavalent	0.0005	U	0.00061		NC
	Cobalt	0.025		0.025		0.0
	Cyanide	0.055		0.051		1.9
	Iron	9.4		7.4		6.0
	Lead	0.014		0.012		3.8
	Manganese	2.9		3		0.8
	Mercury	0.0000589	U	0.0000589	U	NC
	Nickel	0.64		0.65		0.4
	Selenium	0.019		0.022		3.7
	Silver	0.002112456	U	0.002	U	NC
	Vanadium	0.019	J	0.017	J	2.8

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/l = micrograms per liter
mg/l = milligrams per liter
bold value = Field Duplicate RPD Outlier

Table A-4
Completeness Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	Total Number of Results	Number of Usable Results	Percent Technical Compliance
TPH :	Diesel Range Organics (DRO)	100	100	100
	Motor Oil Range Organics (MRO)	100	100	100
	Gasoline Range Organics (GRO)	100	100	100
VOCs:	All VOC Analytes	111	111	100
SVOCs:	All SVOC Analytes	100	100	100
Metals (total):	Antimony	98	98	100
	Arsenic	98	98	100
	Barium	98	98	100
	Beryllium	98	98	100
	Cadmium	98	98	100
	Chromium	98	98	100
	Cobalt	98	98	100
	Cyanide	98	98	100
	Hexavalent Chromium	98	98	100
	Iron	98	98	100
	Lead	98	98	100
	Manganese	98	98	100
	Mercury	98	98	100
	Nickel	98	98	100
	Selenium	98	98	100
	Silver	98	98	100
	Vanadium	98	98	100
	Zinc	98	98	100
Metals (mg/l dissolved):	Antimony	10	10	100
	Arsenic	10	10	100
	Barium	10	10	100
	Beryllium	10	10	100
	Cadmium	10	10	100
	Chromium	10	10	100
	Cobalt	10	10	100
	Iron	10	10	100
	Lead	10	10	100
	Manganese	10	10	100
	Nickel	10	10	100
	Selenium	10	10	100
	Silver	10	10	100
	Vanadium	10	10	100
	Zinc	10	10	100
Water Quality (mg/l)	Chloride	10	10	100
	Fluoride	10	10	100
	Sulfate	10	10	100

Notes:
Number of samples used in completeness calculations includes soil samples, groundwater samples, soil and groundwater field duplicates, equipment rinsate, and field blanks.
Percent Technial Compliance = (Number of usable results / Number of reported results) * 100

Appendix F
Historical Analyses

TABLE 2

Ciniza Refinery Metals Results for Wastewater samples
Taken During July and August,1980.

Metal	New Well Raw Water 7/23/80 0830 hrs.	Pond 3 Inlet /Softener Waste 8/11/80 1000 hrs.	Cooling Water Tower Blowdown 7/23/80 0830 hrs.	API Separator Overflow 7/17/80 1330 hrs.	API Sepatrator Overflow 7/19/80 1300 hrs.	API Separator Overflow 7/23/80 0830 hrs.
Arsenic	0.003	0.031	0.013	0.004	0.005	0.015
Barium	0.014	0.068	0.022	0.22	0.094	0.105
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.001	0.026	13.	0.91	0.64	1.2
Lead	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
Selenium	<0.001	0.097	0.025	0.015	0.018	0.024
Silver	<0.001	0.002	0.010	0.006	0.012	0.005

Controls for Environmental Pollution, Inc.
P.O. BOX 5351 • Santa Fe, New Mexico 87502
IN STATE 505/982-9841
OUT OF STATE 800/545-2180

4

REPORT OF ANALYSIS

LAB # 84-03-404

LE IDENTIFICATION	DATE COLLECTED	TYPE OF ANALYSIS	mg/liter	
Seperator Sludge	03/13/84	Silver	<0.01	
		Arsenic	<0.01	
		Barium	0.4	
		Cadmium	<0.001	
		Chromium	0.036	
		Chromium, Hexavalent	<0.01	
		Chromium	10	(ug/gram)
		Mercury	<0.0004	
		Oil and Grease	26,000	(ug/gram)
		Lead	<0.001	
		Lead	340	(ug/gram)
		pH	9.30	(units)
		Selenium	<0.01	
		Total Organic Carbon	>400,000	

Appendix G

Aquifer Yield and Soil Permeability Tests

APPENDIX C – DISCHARGE PLAN APPLICATION
GIANT REFINING COMPANY
CINIZA REFINERY

November 21, 1985

APPENDIX C
AQUIFER-TEST DATA AND ANALYSES

TEST PUMPING OF CHINLE SHALE

METHODOLOGY AND DESCRIPTION OF THE TEST

The test consisted of a 5 hour pumping period and a 2 hour recovery period. An air-driven piston pump capable of sustaining pumping rates as low as 10 gallons/hour (0.167 gpm) was used for the test. Water level measurments were taken with an electronic sounder. The well (OW-24) is located approximately 250 feet northwest of the land treatment facility and is completed within the Chinle shale. The lithologic and completion log of the well is attached (Figure F-2).

Pumping began at 1515 hours on February 20, 1985 at a rate of 10 gallons/hour. The produced water was very turbid. Clogging of the pump and pump lines necessitated continuous monitoring and adjustment of the discharge.

After 4 hours of pumping at 10 gallons/hour, the drawdown of the well appeared to stabilize at about 7 feet. The discharge rate was increased to 20 gallons/hour in order to more effectively stress the aquitard. After one hour of additional pumping a total drawdown of 12 feet was observed. However, this higher pumping rate increased the turbidity of the discharge and caused instability of the pumping rate. The lack of control of the discharge rate and the potential of diamage to the pump forced the termination of the test after a total of 5 hours of pumping.

Water level recovery was observed for 100 minutes. At this time the water level had recovered to within 90% of the pre-pumping level.

TABLE F-1

Pump Test Data, OW-24

PUMP TEST ANALYSIS

Field measurements are summarized in Table F-1. Due to the short pumping time and potential well-bore and gravel-pack effects, the final analysis was based on methods developed by Shafer, for low-conductivity materials.

Partial penetration effects were neglected in the analysis because the low pumping rates and the expected anisotropy of the aquitard would prevent significant vertical flow to the well bore. The low pumping rate was also designed to completely drain the gravel pack in the well to insure accurate recovery data.

A copy of Shafer's methodology is attached, and the data for his analysis is given in Table F-2. Figure F-1 is a plot of the recovery data, according to Shafer's methods. This Figure includes calculation of T and K for the Chinle shales.

TD = 58'-4" = 58.33'

DW = 31.96

26.37' of water

Pump @ 55

≈ 18 gal

PUMPING DATA

DATA SHEET FOR RECORDING PUMP TEST DATA

County : McKinley Co.

Location: Ciniza Refinery 2/22/85

Observation well no. ____

Pumped well no. OW-24

Average Q ____ gpm r = ____ ft. r^2 = ____

Date	Hour	t (min)	t' (min)	t/t'	Depth to water	s (unadjusted)	Adjustment Δs	s' (adjusted)	gph Q (gpm)	Remarks
2-20	1515	0			31'-11.5"	0"	Feet		10 gph	STATIC LEVEL w/ PUMP
	1516	1			33-0	12.5	1.04			LARGE INITIAL DRAW DOWN FILL HOSE FILL ETC
	1517	2			33-1	13.5	1.13			Setting pump rate
	1518	3			33-4	16.5	1.38			
	1519	4			33-8¾	20.75	1.73			
	1520	5			33-11½	24.0	2.0'			
	1521	6			34-2	26.5	2.22			
	1522	7			34-2½	27.0	2.25			
1 min	1523	8			34-3	27.5	2.27			
	1524	9			34-4	28.5	2.37			
	1525	10			34-5	29.5	2.46			
	1527	12			34-6¾	30.75	2.56			
	1529	14			34-9	33.5	2.79			
	1531	16			35-0	36.5"	3.04			
2 min	1533	18			35-2½	39.75	3.23			
	1535	20			35-4½	41.0	3.42			
	1540	25			35-10½	47.0	3.92			
	1545	30			36-3	51.5	4.28			
	1550	35			36-2½	51.0	4.25			
	1555	40			36-8	56.5	4.71		10 gal	CLEARED PUMP Valve
5 min	1600	45			37-2¼	62.75	5.23			
	1605	50			36-10½	81.0	5.08			clear pump valve
	1610	55			NR	70.75				
	1615	60			37-10¼	82.75	5.90			Pumped 10 gal
10 min	1625	70			38-½	85.0	6.08			

PUMPING DATA

DATA SHEET FOR RECORDING PUMP TEST DATA

County: _____ Observation well no. MW-24

Location: Cimiga Refinery Pumped well no. MW-24

Average Q 10 gpm r = — ft. r^2 = —

Date	Hour	t (min)	t' (min)	t/t'	Depth to water	s (unadjusted)	Adjustment As	s' (adjusted)	Q gpm	Remarks
2-20	1635	80			39-3½	~~80.0~~ 78	6.33		10	
	1645	90			38-7	~~91.5~~ 79.5	6.79			Lift pump to 50'
	1655	100			37-6½	69.0	5.75			clear pump, ready pretime
	1705	110			38-11½	~~94.0~~ 84.0	7.00			
2 hours	1715	120			39-2½		7.27			Pumped 20 gal
	1730	135			38-11		6.97			
15 min	1745	150			39-2½		7.25			
	1800	165			39-0½		7.08			
3 h	1815	180			39-2		7.21			Pumped 30 gal
	1830	195			39-5		7.46			
	1845	210			39-5		7.46			
	1900	225			39-2		7.21			
4 h	1915	240			38-11½		7.00			Pumped 40 gal
	1930	255			39-0		7.04		10	
	1932	257			39-4		7.38		20	INCREASE PUMP RATE TO 30 GPM
	1934	259			39-10		7.87			PUMP SLIPPED APPROX 1 FOOT - REPLACED TO APPROX SAME LEVEL
2 min	1936	261			40-3½		8.33			
	1938	263			40-3½		8.33			
	1940	265			40-1½		8.17			PUMPING RATE TELL-OFF SLIGHTLY
	1945	270			40-9		8.79			
	1950	275			41-9½		9.83			
5 min	1955	280			42-0		10.04			
	~~2000~~	285			41-8		9.72			
	2005	290			42-6½		9.75			
	2010	295			43-4		11.27			Silt in Pump?
15 min 5 h	2015	300			43-2½		11.25			Adj pump valve pumped 10 gal
	2030	315			45-10½		11.92			

RECOVERY DATA

DATA SHEET FOR RECORDING PUMP TEST DATA

County: _____ Observation well no. _____

Location: Cimarron Refining Purged well no. Rec-24

Average Q _____ gpm r = _____ ft. r^2 = _____

Date	Hour	t (min)	t' (min)	t/t'	Depth to water	s (unadjusted)	Adjustment Δs	s' (adjusted)	Q (gpm)	Remarks
1/22	20:32		0		43-11½	144"	12.0'	0	20 gpm	
	2034		2		42-7-		10.63'	1.37		
	2036		4		41-8¾		9.69	2.31		
2 min	2038		6		40-10¾		8.86	3.14		
	2040		8		40-2		8.21	3.79		
	2042		10		39-6¼		7.56	4.44		
	2047		15		38-0¾		6.11	5.89		
	2052		20		37-1½		5.17	6.83		
	2057		25		36'4-		4.38	7.62		
	2102		30		35-8½		3.75	8.25		
	2107		35		35-2¼		3.27	8.73		
	2112		40		34-9¾		2.86	9.14		
5 min	2117		45		34-5¾		2.52	9.48		
	2122		50		34-3¼		2.27	9.73		
	2127		55		34-0½		2.07	9.93		
	2132		60		33-10½		1.92	10.08		
	2142		70		33-7½		1.66	10.34		
10 min	2152		80		33-5¾		1.51	10.49		
	2202		90		33-4½		1.42	10.58		
	2212		100		33-3¼		1.32	10.68		
	2222		110							
	2232		120							
15 min	2247		135							
	2302		150							
	2317		165							

TABLE F-2

DATA FOR SHAFER'S METHOD

Time Since Pumping Started (min)	Drawdown (feet) (s)	Feet of Casing Filled (ft)	Time To Fill (min)	Q (gpm)	S/Q (ft/gpm)
317	12.0	0	0	---	-----
319	10.63	1.37	2	.45	23.8
321	9.69	.94	2	.31	31.6
323	8.86	.83	2	.27	32.7
325	8.21	.65	2	.21	38.7
327	7.56	.65	2	.21	35.6
332	6.11	1.45	5	.19	32.3
337	5.17	.94	5	.13	42.1
342	4.38	.79	5	.10	42.5
347	3.75	.63	5	.08	45.6
352	3.27	.48	5	.06	52.2
357	2.86	.41	5	.05	53.4
362	2.52	.34	5	.04	56.8
367	2.27	.25	5	.03	69.5
372	2.07	.20	5	.026	79.3
377	1.92	.15	5	.019	98.0
387	1.66	.26	10	.017	97.8
397	1.51	.15	10	.009	154
407	1.42	.15	10	.009	145
417	1.32	.10	10	.006	202

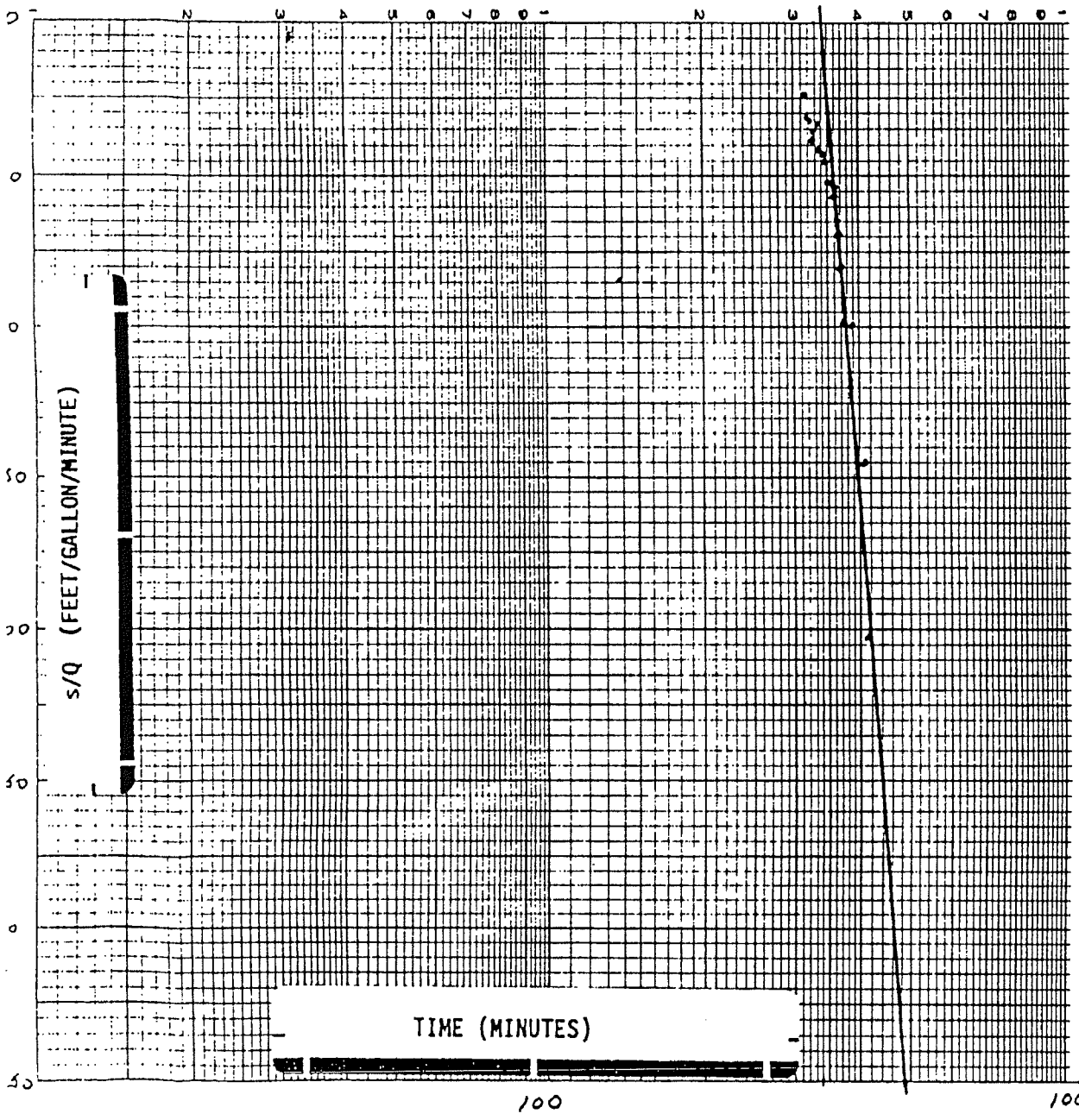


FIGURE F-1
SHAFER PLOT OF DATA FROM OW-24

Calculation of T & K

1) Over the total vertical scale of 350 feet/GPM, time varies by 0.1567 log cycles

2) For 1 full log cycle, s/Q equals 350/.1567 = 2233

3) T = 264/(s/Q) = 264/2233
or T = 0.110 gallons/day/foot

4) For a 20 foot screened interval K = T/b = 0.0055 gallons/day/square foot.

5) .0055 g/d/ft x 1.55×10^{-6} (ft/sec)/(g/d/ft)

$= 8.3 \times 10^{-9}$ ft/sec

BO. .IG OW-24

SURFACE ELEVATION: 6678 FEET

DEPTH IN FEET	TESTS REPORTED ELSEWHERE	ATTERBERG LIMITS: LIQUID LIMIT (%)	ATTERBERG LIMITS: PLASTICITY INDEX (%)	STRENGTH TEST DATA: TYPE OF TEST	STRENGTH TEST DATA: NORMAL OR CONFINING PRESSURE (PSF)	STRENGTH TEST DATA: SHEAR STRENGTH (PSF)	STRENGTH TEST DATA: DEVIATOR STRESS (PSF)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)
0									
10									
20									
30									
40									
50									
60									
70									
80									
90									
100									
110									
120									
130									
140									
150									
160									

LABORATORY TEST DATA

PENETRATION RATE MINUTES/FOOT	SYMBOLS	DESCRIPTION
2.4	CL	TRIASSIC PERIOD CHINLE FORMATION REDDISH BROWN, VERY FINE SANDY CLAY, SOFT, HIGHLY WEATHERED
2.0		
2.0		
1.6		
2.0		
1.8		
2.3	SHALE	30 FEET: SHALE, REDDISH BROWN, SANDY, SOFT, FRESH
1.8		
2.3		
3.5		
3.3		
4.0		
3.7		
4.0		
2.0		
3.0		
2.3		
2.4		

BORING COMPLETED AT 65.0 FEET ON 1/2/81.
4-INCH PVC PIEZOMETER INSTALLED WITH PERFORATIONS FROM 41.0 TO 61.0 FEET.
GRAVEL PLACED FROM 28.0 TO 61.0 FEET AND BORING SEALED WITH BENTONITE AND CEMENT TO SURFACE.
GROUND WATER LEVEL MEASURED AT 32.5 FEET BELOW GROUND ON 1/5/81.

FIGURE F-2
LOG OF WELL OW-24

LOG OF BORINGS

DAMES & MOORE

Pumping Test Analyses for Low Yield Formations

by David C. Shafer

Occasionally it is necessary to determine aquifer characteristics of very low yielding formations—those with transmissivities less than 500 gallons per day per foot. Though interest in these aquifers is certainly not because of their productive capability, it may be desirable to determine groundwater flow characteristics even in these low yield formations in order to determine such things as regional groundwater flow patterns, effect of dewatering or migration of pollution plumes near point sources of contamination.

Different Approach

Conventional pumping test analysis using the standard time drawdown graph often does not work effectively in low T (transmissivity) formations for two reasons. First, the pumped well's low specific capacity (gallons per minute per foot of drawdown) may cause the pump to break suction during the test and it may be impractical to throttle back the pumping rate sufficiently to prevent this. Second, even if a constant pumping rate can be maintained without breaking suction, most of the data obtained will probably reflect casing storage effects rather than true aquifer parameters (see "Casing Storage Can Affect Pumping Test Data," Jan-Feb. 1978, Johnson Drillers Journal). Thus a different approach is required.

The best method for analyzing these formations is to pump a substantial portion of the casing empty, then shut the pump off and measure water levels as they recover. In ordinary pumping tests these measurements correspond to the non-pumping portion of the test. However, in the low T formations this "recovery period" is actually the "pumping period!"

After pump shut-off, the casing slowly begins filling with water. This water comes from the aquifer and actually represents the water pumped during this so called "pumping period." The pumping rate is determined by measuring the volume of

William F. Achuff
Director

Pumping rate = 10 gpm
Pumping period = 15 minutes
Drawdown at pump shut off = 90 ft
Casing — 6" I.D.
Drop pipe — 1¼" I.D.

Time in minutes since pumping started (t)	Drawdown in feet (s)	Number of feet of casing filled	Time in minutes required to fill	Volume filled divided by time required in gallons per minute (Q)	s/Q in feet per gallon per minute
15 (pump shut off)	90				
17	85.66	4.34	2	3.04	28.2
20	79.7	5.96	3	2.78	28.6
30	64.2	15.5	10	2.17	29.5
40	51.9	12.3	10	1.72	30.2
60	35.6	13.3	20	1.14	31.1
80	24.6	11.0	20	.77	31.8

Table 1

casing filled in a given length of time.

During the test, careful measurements are made of time since pumping began (t) along with drawdown (s) at each of these times. Then a calculation is made to determine Q for each time t and finally the ratio s/Q is computed for each measured drawdown value. The ratio is simply the reciprocal of the specific capacity.

A graph is then constructed showing t versus the ratio s/Q plotted as usual on semi-logarithmic graph paper with t on the log scale. A straight line of best fit is drawn through the data points and T is calculated as follows:

$$T = \frac{264}{\Delta(s/Q)}$$

where $\Delta(s/Q)$ is the change in s/Q over one log cycle of graph paper.

This graph has the unique advantage that it will accurately reflect aquifer transmissivity independent of casing storage effects. In addition it will be sensitive to nearby recharge and/or negative boundaries and will reveal these conditions like any ordinary time drawdown graph.

To see how this technique works it is best to work an example. Table 1 shows data obtained from a 6-inch well pumped at 10 gpm for 15 minutes. Drawdown after 15 minutes of pumping measured 90 feet.

The next data point was recorded two minutes following pump shut-off or 17 minutes since pumping started. At this time the pumping water level was 85.66 feet, indicating that 4.34 feet of casing had filled during the two minute interval.

The annulus between the 6-inch casing and 1¼" drop pipe holds 1.4 gallons per foot so that the volume of casing filled is 1.4 times 4.34, or 6.08 gallons in two minutes. Thus,

$$Q = 6.08 \text{ gallons}/2 \text{ minutes} = 3.04 \text{ gpm}$$

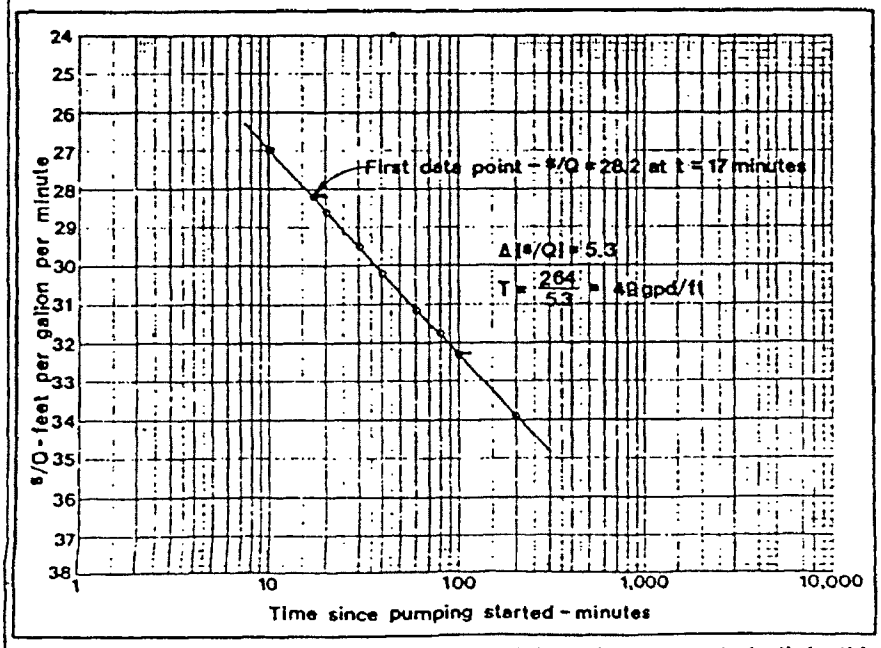
finally,

$$s/Q = 85.66 \text{ ft}/3.04 \text{ gpm} = 28.2 \text{ ft/gpm}$$

which is plotted at a time of 17 minutes on the graph shown here.

This analysis is repeated for each drawdown measurement. The resultant calculated s/Q values are shown in the table and plotted in the figure. The formation T value from the graph is

$$T = \frac{264}{\Delta(s/Q)} = 264/5.3 = 49 \text{ gpd/ft}$$



In low transmissivity situations, readings are taken after pump shut-off. In this method, s/Q is the reciprocal of the specific capacity and t is time, measured after shut-off as water begins to enter the casing.

Conventional Analysis

Examination of the hydraulic characteristics of this well (not included here) shows that if a conventional time drawdown graph had been used, casing storage effects would have lasted for approximately twelve hours. This means that data recorded in the first twelve hours of pumping would have been useless and longer pumping than this would have been required to obtain any usable data at all. However, data collected after twelve hours of pumping probably would be more influenced by boundary conditions than by aquifer transmissivity. Thus, in practice, it actually might have been impossible to determine the T value using conventional analysis techniques regardless of the length of the test. The value of the method described above becomes very clear; it may be the only way to determine T values in certain low yielding aquifers.

In order to maximize the accuracy of this method, it is best to unload (empty) the casing as rapidly as possible. Thus it is actually better to use a high capacity pump than a low capacity pump in analyzing extremely low-yielding wells!

Another good idea is to unload the casing with compressed air since this can typically be done in one minute or less.

Recorded Data Must Be Accurate

An additional important consideration is that all data recorded for this type of analysis must be absolutely accurate. Small errors in the recorded values of time and/or drawdown can result in large errors in the calculated values of s/Q. For best results, drawdown should be recorded to the nearest hundredth of a foot and timed to the nearest second or two.

JOHN W. SHOMAKER
CONSULTING GEOLOGIST
3236 CANDELARIA, N.E.
ALBUQUERQUE, NEW MEXICO 87107

(505) 884-2897

RECEIVED SEP 24 1984

September 20, 1984

Carl D. Shook, Plant Manager
Giant Refining Company, Ciniza Refinery
Route 3, Box 7
Gallup, New Mexico 87301

Re: results of permeability tests, July 2 and 3, 1984

Dear Carl:

Copies of the field notes, calculations, and data plots for the two permeability tests are attached. The tests are summarized as follows:

Well OW-4 The well is completed principally in the clay and shale sequence which overlies the uppermost aquifer; a small thickness of sandstone which may be part of the uppermost aquifer was also penetrated. Total depth when drilled was 102.0 ft. Perforations are from 62.0 ft to 102 ft. The well is located near the center of the land-treatment area. A slug test was performed on July 3, 1984, following the method described by S. W. Lohman (1972, Ground-Water Hydraulics, U. S. Geol. Survey Prof. Paper 708, p. 27-29), which indicates the permeability of the section open to the well to be about 4×10^{-7} cm/sec.

Well MW-1 This well is one of the monitoring wells on the boundary of the land-treatment area, and is completed in the uppermost aquifer. It was drilled to 120 ft, and is screened in the interval 87 to 120 ft; the casing is sealed above 89 ft so as to isolate the uppermost aquifer. The slug test performed on July 3, 1984 indicated a permeability of about 1.2×10^{-4} cm/sec.

Information as to the construction of the wells is taken from Dames and Moore (March, 1981; Ground water and soils investigation, Ciniza Refinery near Gallup, New Mexico, and November, 1981, Groundwater monitoring plan, Ciniza Refinery near Gallup, New Mexico).

Please let me know if there are questions.

Sincerely,

John W. Shomaker
Consulting Geologist

cc: Tom Andrews, Delta H Engineering w/encl

well: Shell - Mira OW-4
date: 7-3-84

casing size: nominal 4½" ID 4.0 csg. matl. PVC
water levels measured from top 4½ OD PVC casing, S side,
which is 1.7 ± above ground level.
volume of slug:

OD, ft $\left(\frac{0.27}{0.30}\right)$	$\times \left(\frac{1}{2}\right)^2 \times \pi \times$ length, ft		$= V$, ft^3
0.30		0.10	0.006
0.243		0.04	0.003
0.27		4.84	0.224
0.243		0.26	0.015
0.27		4.81	0.223
0.18		0.26	0.015
0.11		0.03	0.001
		0.25	0.002
			/
		Sum	0.489 = V, ft^3 = 3.66 gal.

Note - obstruction in casing at 33. won't pass 0.27 OD.

r_c = internal radius of casing above perfs: 0.165 ft

r_s = radius of screen or open hole: _____ ft

initial water level 26.15 ft below MP, time 07:51

$$H_o = \frac{V}{\pi r_c^2} = \frac{0.489}{\pi (0.165)^2} = 5.72 \text{ ft}$$

clock time	t, sec.	water level	H	H/H_o	remarks
08:20:54	0				slug released top slug: 23.2' MP
21:25 ?	31 ?	20.75	5.40	0.944	
22:28	94	20.76	5.39	0.942	
23:14	140	20.80	5.35	0.935	
23:51	177	20.81	5.34	0.934	
24:42	228	20.83	5.32	0.930	
25:42	288	20.87	5.28	0.923	
27:06	372	20.90	5.25	0.918	
28:14	440	20.92	5.23	0.914	
29:43	529	20.95	5.20	0.909	
30:55	601	20.97	5.18	0.906	
32:46	712	21.00	5.15	0.900	
35:16	862	21.04	5.11	0.893	
38:38	1064	21.10	5.05	0.883	
43:30	1356	21.19	4.96	0.867	
46:52	1558	21.21	4.94	0.864	raised slug 0.4ft.
49:26	1712	21.25	4.90	0.857	
52:54	1920	21.30	4.85	0.848	

t_0 = 08:20:54

0:00 = 2:46

clock time	t, sec.	level	H	H/H_0	remarks
~~08:54:13~~		~~21.34~~			
08:56:50	2096	21.35	4.80	0.839	
09:00:16	2362	21.39	4.76	0.832	
:05:00	2646	21.45	4.70	0.822	
09:55	2941	21.50	4.65	0.813	
17:46	3412	21.60	4.55	0.795	
28:25	4051	21.71	4.44	0.776	m-scope trouble
46:00	5106	21.89	4.26	0.745	
10:02:23	6089	22.05	4.10	0.717	
14:00	6786	22.15	4.00	0.699	
10:24:26	7412	22.25	3.90	0.682	stopped test; slug almost uncovered

late data matches: $\alpha = 10^{-1}$ curve, $Tt/r_c^2 = 1$ at $t = 50{,}000$ sec.

$T = \frac{1.0\, r_c^2}{t} = \frac{(1.0)(0.165)^2}{50{,}000} = 5.4 \times 10^{-7}$ ft²/sec

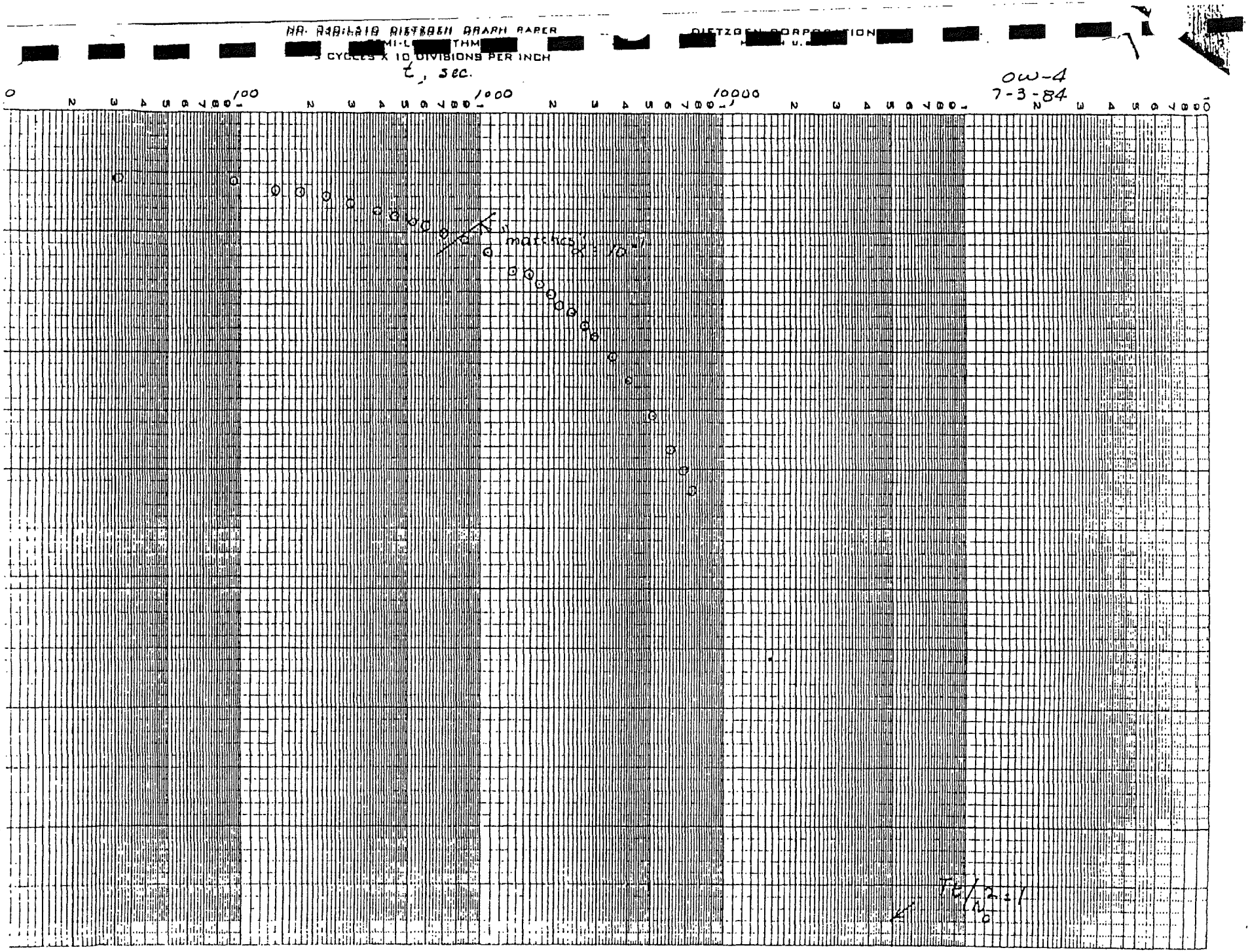
$= 0.05$ ft²/day $= 0.35$ gpd/ft

$K_h = \frac{0.05 \text{ ft}^2/\text{day}}{40 \text{ ft screen}} = 0.001$ ft/day

0.001 ft/day $\times 30.5$ cm/ft $\times \frac{1}{60 \times 1440}$ sec/day $= 4 \times 10^{-7}$ cm/sec

$S = \frac{r_c^2}{r_s^2}\alpha \approx \frac{0.027}{0.080} = 10^{-1} = 0.03$ ∴ water-table storage

67% "hole!"


t, sec.
100
1000
10000
OW-4
7-3-84
matches

date: 7-2-84

casing size: nominal 5 1/2" OD, ID 5.1" csg. matl. PVC
water levels measured from top PVC casing, SW side
which is 1.37 ft above ground level, (concrete slab)
volume of slug:

2.05
.68
1.37

cap OD, ft $\left(\frac{0.37}{0.39} \times \frac{1}{2}\right)^2 \times \pi \times$ length, ft		=	ft^3
	0.10		0.011
	0.05		0.006
	4.81		0.411
	0.28		0.032
	0.04		0.003
	0.04		0.006
	0.03		0.002
	0.03		0.001
	0.25		0.002
sum	0.474	= V,	ft^3 = 3.55 gal

r_c = internal radius of casing above perfs: 0.211 ft

r_s = radius of screen or open hole: _____ ft

initial water level 5.72 ft below mp, time 13:32

$$H_o = \frac{V}{\pi r_c^2} = \frac{0.474}{\pi (0.211)^2} = 3.389 \text{ ft}$$

clock time	t, sec.	water level	H	H/Ho	remarks
13:48:00	0				slug released
13:48:20	20	2.30 ft	3.42	1.009	??
49:00	60	2.36	3.36	0.991	
49:26	86	2.42	3.30	0.974	
49:52	112	2.44	3.28	0.968	
50:32	152	2.50	3.22	0.950	
51:05	185	2.56	3.16	0.932	
51:42	222	2.60	3.12	0.921	
52:19	259	2.65	3.07	0.906	
52:55	295	2.70	3.02	0.891	
53:33	333	2.74	2.98	0.879	
54:26	386	2.80	2.92	0.862	
55:30	450	2.86	2.86	0.844	
57:05	545	2.91	2.75	0.811	
59:12	672	3.10	2.62	0.773	
14:01:05	785	3.20	2.52	0.744	
02:24	868	3.28	2.44	0.720	
03:52	952	3.36	2.36	0.696	

clock time	t, sec.	level	H	H/H_o	remarks
14:05:38	1058	3.45	2.27	0.670	
07:22	1167	3.54	2.18	0.643	
09:16	1276	3.62	2.10	0.620	
11:01	1381	3.69	2.03	0.599	
13:17	1517	3.79	1.93	0.569	
15:59	1679	3.89	1.83	0.540	
18:14	1814	3.97	1.75	0.516	
20:40	1960	4.07	1.65	0.487	
23:15	2115	4.15	1.57	0.463	
25:44	2264	4.22	1.50	0.443	
28:45	2445	4.31	1.41	0.416	
33:09	2709	4.43	1.29	0.381	
36:51	2931	4.52	1.20	0.354	
41:56	3236	4.64	1.08	0.319	
46:19	3499	4.71	1.01	0.298	
50:03	3723	4.78	0.94	0.277	
57:39	4179	4.90	0.82	0.242	
15:05:36	4356	5.01	0.71	0.210	
14:12	5172	5.12	0.60	0.177	
21:12	5592	5.18	0.54	0.159	
33:01	6301	5.28	0.44	0.130	
44:35	6995	5.36	0.36	0.106	
53:43	7543	5.40	0.32	0.094	
16:08:22	8422	5.46	0.26	0.077	
26:59	9539	5.52	0.20	0.059	
47:10	10,750.	5.56	0.16	0.047	
17:00:20	11,540	5.58	0.14	0.041	

late data matches: $\alpha = 10^{-5}$ curve, $Tt/r_c^2 = 1$ at $t = 830$ sec.

$T = \frac{1.0\, r_c^2}{t} = \frac{(1.0)(0.21)^2}{830} = 5.36 \times 10^{-5}$ ft²/sec

$= 4.63$ ft²/day = 35 gpd/ft

$K_h = \frac{4.63 \text{ ft}^2/\text{day}}{13.3 \text{ ft screened}} = 0.35$ ft/day

$0.35 \text{ ft/day} \times 30.5 \text{ cm/ft} \times \frac{1}{60 \times 1440 \text{ sec/day}} = 1.2 \times 10^{-4}$ cm/sec

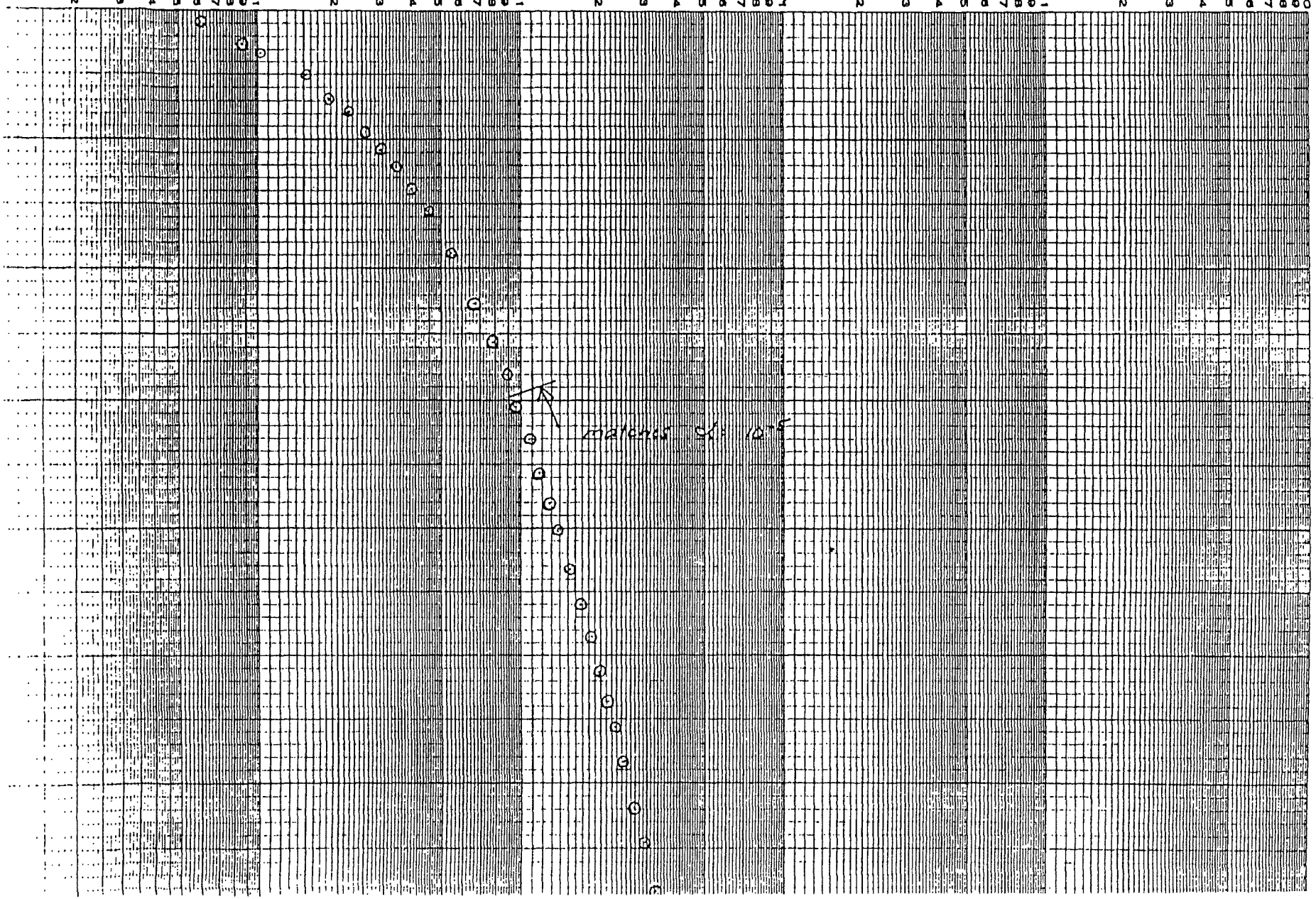
NO. 340-LS10 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH

DIETZGEN CORPORATION
MADE IN U.S.A.

t, sec.

MW-1
7-2-84

100 1000 10000



APPENDIX C
RCRA POST-CLOSURE CARE PERMIT APPLICATION
LAND TREATMENT UNIT
GIANT REFINING COMPANY
CINIZA REFINERY

May 2000

RCRA Part A and Part B
Post-Closure Permit Application
Land Treatment Unit
May 2000

APPENDIX C

Land Treatment Unit Historical Information and Data

LAND TREATMENT UNIT HISTORICAL INFORMATION AND DATA

1.0 LAND TREATMENT HISTORY

> Historical LTU information and data extracted from existing permit applications, operating permits, operating records, and other source documents are provided as Appendix C. The inclusion of this appendix does not imply that historical information and data have been verified.

In August 1980, Ciniza Refinery (Ciniza) notified the U.S. Environmental Protection Agency (EPA) that it was a generator and operator of a hazardous waste management facility. In November 1980, Ciniza submitted a Part A permit application as an "existing facility" (defined at 40 *Code of Federal Regulations* §260.10). This granted Ciniza interim status for their Land Treatment Unit (LTU) operations. In response to notice from the Regional Administrator, Ciniza submitted a Part B permit application in December 1983. Based on changing guidance, Ciniza submitted a land treatment demonstration plan (LTD) and an application for a two-phase LTD permit in April 1985. On February 9, 1987, Ciniza was issued a Short-term LTD Permit (NMD000333211-1) to conduct a hazardous waste land LTD. The LTD was conducted to identify the land treatment capabilities for refinery waste generated by Ciniza. The LTD defined waste management parameters (e.g., rate-limiting constituent, application-limiting constituent, capacity-limiting constituent, and unit life of the LTU). This was accomplished by identifying the Principal Hazardous Constituents (PHCs) present in refinery waste streams and measuring their degradation, transformation, and immobilization in the treatment zone of the LTU. From the results of the LTD and a modified Part B permit application, Ciniza was issued a Hazardous Waste Facility Permit (NMD 000333211-2) on November 4, 1988. Ciniza has not applied hazardous wastes to the LTU since November 8, 1990.

1.1 Land Treatment Program [20 NMAC 4.1, Subpart IX, §270.20(b)]

Ciniza's Hazardous Waste Facility Permit established operational requirements for the LTU. These requirements inchinclude procedural and engineering controls necessary to ensure that hazardous constituents are fully treated within the LTU without uncontrolled release to the environment.

The LTU consists of a treatment zone of soil extending 5 ft deep from the original soil surface. This depth is shallow enough to ensure that the treatment zone is more than 3 ft above the seasonal high water table. The zone of incorporation (ZOI) within the treatment zone is the volume of soil to which the waste was directly applied.

The ZOI for the Ciniza LTU is the top 12 in. of the treatment zone. The LTU was designed and constructed to prevent both washout of any hazardous waste and to prevent inundation of and discharge from the permitted unit through the use of a continuous dike which surrounds the LTU at an elevation of 3 ft above the natural grade.

The ZOI was tilled during permitted operations to encourage aerobic microbial activity and improve chemical reaction rates. During active treatment soil nutrients were applied, as necessary, to optimize carbon:nitrogen: phosphorous (C:N:P) ratios. Applications of Ciniza wastes to the LTU were limited to ensure that treatment processes were not overwhelmed or poisoned. Performance indicators (e.g., soil moisture, pH, total organic carbon) were monitored in the ZOI to ensure that treatment was proceeding.

1.2 Treatment Zone Description [20 NMAC 4.1, Subpart IX, §270.20(b)(2) and §270.20(b)(5)]
The LTU consists of three 480-by-240-ft sections, each of which contain 2.6 acres (1.0 hectares) of available treatment surface. Each section is delineated by a continuous dike to prevent site runon and runoff. The treatment zone extends 5-ft deep from the top of the soil within the diked section. The top 12 in. of the treatment zone is the ZOI. The ZOI is tilled when active to encourage aerobic degradation of organics and to maintain moisture content of the soil. This leaves 4 ft of the treatment zone undisturbed.

The soil within the treatment zone is silty clay containing closely-spaced root systems in the uppermost 3 to 4 ft. Field infiltration rates (the rate at which water penetrates into the soil surface) averages 1.0×10^{-3} cm/sec or 3.6 cm/hr. Soil permeability as determined by laboratory measurements averages 1.9×10^{-5} cm/sec or 6.8×10^{-2} cm/hr for three locations at the 6- to 12-in. depth. Field infiltration rate allows prediction of runoff and erosion; permeability (hydraulic conductivity) allows estimation of vertical water movement rates in the soil. The treatment zone soils have a saturated hydraulic conductivity rating of "moderately low" by the U.S. Department of Agriculture Class (Giant Refining Company Part B Permit Application 1984). The low permeability of the treatment zone soil assists in retarding the vertical movement of hazardous constituents through the treatment zone.

The silty clay soil has a high cation exchange capacity (CEC). The CEC is the total amount of exchangeable cations that the soil has to exchange with cations in the soil solution. The exchangeable cations in the LTU are the heavy metals present in the Ciniza wastes. The high CEC results in high sorption of heavy metals in the LTU soils, assuming other factors (such as soil pH) are favorable.

RECENT SOIL PERMEABILITY TESTS
FIREWATER POND CONSTRUCTION PROJECT

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

Rec.

Revised File Name

Rigid Wall Hydraulic Conductivity
Falling Head

ATTN: James Romero
Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

Project: Ciniza Fire Water Lagoon — File No.: 05-100
Soil Type: Silty Clay — Date: October 13, 2005 — Lab No.: 47872
Sampled From: Boring 05-100-1(2.5'-3.0') — Performed By: GG

TEST SPECIMEN CONDITIONS AT BEGINING OF TEST:

Wet Unit Weight: 120.8 pcf
Dry Unit Weight: 109.0 pcf
% Moisture: 10.8
% Compaction: n/a
% Compaction Requested: n/a

PROCTOR INFORMATION:

Maximum Dry Density: n/a pcf
Optimum Moisture Content: n/a %

Coefficient of Permeability, k_{20}: 1.1×10^{-7} cm/sec. avg

Remarks: Avg of three: 1.1×10^{-7}, 1.1×10^{-7}, 1.1×10^{-7}

C:\bill\Projects\2005\05100cinizafirewtr\[Permeability.xls]Report

Reviewed By:

Reviewed By:

Certified By:

05-100
SWMU NO. 1
AL2
AL1
LAB #
DEPTH
0.0-5.0

...W Corner of Proposed
...Lagoon
...levation: -98.2@TD,-27@1 hr
...Ad#: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Giant-Cliniza

Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS
	0.0-5.0				Clay, Very Silty, Sandy, Very Fine, Dark Red, Wet, Firm.				
47872				2.5	[2.5-3.0 hydraulic conductivity sample]				
	5.0-10.0			5.0	Same As Above, Wet, Soft				
				7.5					
	10.0-15.0			10.0	Same As Above				
				12.5					
	15.0-16.0				Same As Above				
	16.0-17.5				Sand, Very Fine, Very Clayey, Very Silty, Weak Water Bearing, Moderately Dense, Dark Red/Brown				
	17.5-21.5				Clay, Dark Red, Wet, Soft				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY WHK

C:\toll\Projects\2005\05100cliniza\new\[Boring 1.xls]Sheet1

Sheet: 2 OF 5
Bore Point: SW Corner of Proposed Fire Water Lagoon
Water Elevation:
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-623-7574

File #:
Site: City of Las Cruces Wastewater Treatment Facility
Elevation: EXISTING
Date: 9/24/2005
Drilling No.: 05-100-1

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS
	21.5-22.1				Clay, Sandy, Dark Brown, Wet, Stiff				
	22.1-23.5				Clay, Hard, Red/Brown (Brighter than Above), Wet/Moist				
	23.5-25.1				Petrified Forest Formation				
	25.0-30.0			25.0	Mudstone/Claystone, Weathered, Some Grey/Green Reduction Spots, Generally Red/ Brown, Flasile to Crumbly, Damp/Moist				
					Mudstone, As Above, Few Reduction Spots, Damp/Dry				
	30.0-35.0			30.0	Same As Above dry				
	35.0-40.0			35.0	Same As Above dry				
	40.0-45.0			40.0	Same As Above, Brighter Red @ 44.5-45.0', dry				
	41.5				siltstone/mudstone, dry, very dense,bright red brown				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bin\Projects\2005\05100\cities\fireww\[Boring 1.xls]Sheet1A

Sheet: 2 OF 5
Bore Point: SW Corner of Proposed Fire Water Lagoon
Water Elevation:
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Cinza Fire Water Lagoon
Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS
	21.5-22.1				Clay, Sandy, Dark Brown, Wet, Stiff				
	22.1-23.5				Clay, Hard, Red/Brown (Brighter than Above), Wet/Moist				
	23.5-25.1				Petrified Forest Formation				
				25.0	Mudstone/Claystone, Weathered, Some Grey/Green Reduction Spots, Generally Red/ Brown, Friable to Crumbly, Damp/Moist				
	25.0-30.0				Mudstone, As Above, Few Reduction Spots, Damp/Dry				
				30.0					
	30.0-35.0				Same As Above dry				
				35.0					
	35.0-40.0				Same As Above dry				
				40.0					
	40.0-45.0				Same As Above, Brighter Red @ 44.5-45.0', dry				
	41.5				siltstone/mudstone, dry, very dense,bright red brown				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: WHK

C:\bill\Projects\2005\05100cinzafirewtr\[Boring 1.xls]Sheet1A

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7874

File #: 05-100
Site: Giant-Cruza
Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR ETC.)	%M	LL	PI	CLASS.
	45.0-50.0			45.0	Mudstone/Siltstone, Bright Red/Brown, Dry Very Dense				
	50.0-55.0			50.0	Same As Above				
	55.0-60.0			55.0	Same As Above				
	60.0-65.0			60.0	Same As Above				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100cruzafrewit\[Boring 1.xls]Sheet18

Sheet: 4 OF 5

Bore Point: SW Corner of Proposed Fire Water Lagoon

Water Elevation:

Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-521-7674

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS
				65.0					
					Same As Above				
	66.0-66.2								
	66.2-67.4				Sandstone, Fine, Red/Brown, Hard, Fissile, Grey/Green Oolitic Reduction Spots Abundant, Dry				
	67.4-78.0				Sandstone/Siltstone Interbeds, Same Mudstone, Dark Red/Brown, Hard, Dry				
				70.0					
				75.0					
	78.0-79.1				Mudstone, Fissile, Dry, Red/Brown, Some Grey/Green Reduction Spots				
	79.1-97.7			80.0	Sandstone, Fine, Red/Brown, Fissile, Hard, Feldspathic, Bedded 6" to 1.0', White Mottled Upper Sonsela Member				
				85.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Giant Cintas

Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

Elevation: EXISTING
Date: 9/24/2005
File #: 05-100-1
Site: Giant Cintas
Location: 4' of S. Corner of Proposed

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS
					Upper Sonsela Member Continued (dry)				
				90.0					
				95.0					
	97.7-98.2				Mudstone, Hard, Dry, Green/Grey-White				
	98.2-101.6			100.0	Sandstone, Fine to Medium, Quartz Grains, Water Bearing, Hard, (Sonsela Member, Petrified Forest Formation, Chinle Group)				
	101.6				TD				
				105.0	Boring continuopusly sampled using 5' split barreled intrusion sampler. Boring closed using 10' of 3/8" TR-30 Pel Plug capped with 50' of 6% bentonite cement slurry and backfilled to the ground surface with cuttings.				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100cinzafirewtr\[Boring 1.xls]Sheet1D

Appendix H
SWMU 10 Historical Aerial Photo

SWMU 10

Aerial Map Source: Google Map, 02/19/2014.

N

0 100
SCALE IN FEET

LEGEND

SWMU No. 10 APPROXIMATE LOCATION

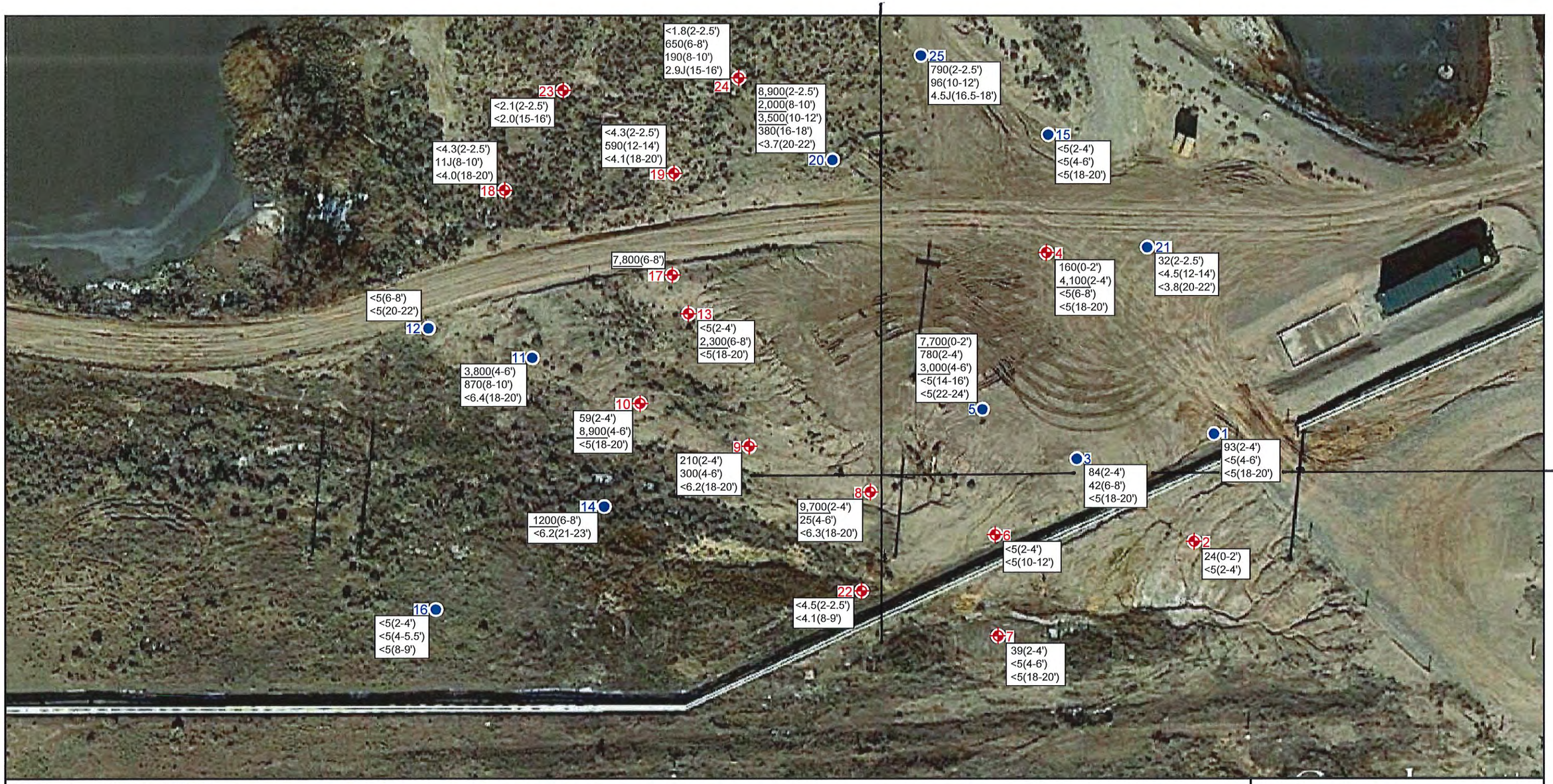
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:10/05/18 | FILE:WestRef-dB184

FIGURE 2
SWMU No. 10 LOCATION MAP

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

N

0 40
SCALE IN FEET

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
160(0-2')	DIESEL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
1,000	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE:08/05/16 | FILE:WestRef-dB73

FIGURE 22
DIESEL RANGE ORGANICS
SOILS CONCENTRATION MAP
SWMU No. 10

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759