AP - 111

C-141s

(7)

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

APR 0 3 2020

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

RE: APPROVAL WITH MODIFICATIONS
RESPONSE ACTION REPORT DGS 105 ADDITIVE TANK – RAIL CAR LOADING AREA – GASOLINE RELEASE
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-20-004

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Response Action Report DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release* (Report), dated January 6, 2020, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications with the following comments. NMED's comments are attached.

The Permittee must address all comments in the attachment and submit a response letter, and replacement pages no later than **June 29, 2020**. The investigation work plan required by Comments 2, 4 and 5 must be submitted no later than **August 31, 2020**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document

does not constitute agreement with all information or every statement presented in the document.

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6046.

Sincerely,

for

Kevin Pierard
Chief
Hazardous Waste Bureau

cc: 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 2020 File
HWB-WRG-20-004

Attachment 1

NMED Comments

Comment 1
In the Executive Summary, page 5 of 8, the Permittee states, "[t]his Response Action Report provides the details for the approximately 8,900-gallon rail car loading area gasoline release... A vacuum truck was used to recover the estimated 8,900 gallons of gasoline." The statement indicates that entire volume of the released gasoline was recovered by a vacuum truck. Verify the accuracy of the statement and provide an accurate estimate of the released and recoved volumes of gasoline in a response letter.

Comment 2
In the Executive Summary, page 5 of 8, the Permittee states, "[a]pproximately 153 tons of spill area soil was excavated and delivered to Valencia Regional Landfill in Los Lunas, New Mexico for disposal. Soil confirmation samples were not collected in the spill area." It is necessary to collect soil confirmation samples from the limits of the excavation. Submit a work plan to advance soil borings to the final depth of the excavation. If the excavation pit was already backfilled, and collect samples from the native soils directly beneath the backfill materials for the analytical suite listed on page 8 of 8 in the Report. If the pit is open at this time, collect soil samples from the excavation limits.

Comment 3
In the General Information Section, *Description of the Release,* page 5 of 8, the Permittee states, "[t]he Refinery's on-site laboratory analyzed a hydrocarbon sample from the release verifying that the product was gasoline." If the gasoline contained additives, provide the information regarding the constituents in the response letter.

Comment 4
In the General Information Section, *Description of the Release,* page 6 of 8, the Permittee states, "[c]lean-up activities outside the containment areas were not conducted because the spill generally was contained inside the bermed area." Soil samples outside of the bermed area must be collected to confirm that the spill was contained within the berm and the soils were not adversely affected. Submit a work plan to collect soil samples outside of the bermed area.

Comment 5
In the Remediation Activities Section, *Remediation,* page 6 of 8, the Permittee states, "[f]ollowing removal of the surface gasoline, approximately 153 tons of petroleum impacted soils below the pipe rack were excavated to an 18-inch depth in an area approximately 41 feet by 97 feet (Figure 3) in November of 2018." The gasoline release occurred in May 2017. The contaminated soils were excavated approximately 16 months after the release. During the 16-month period, residual hydrocarbons may have infiltrated into soils to depths below 18 inches bgs. Submit a work plan to advance soil borings to depths below the excavation floor and collect soil samples to determine the vertical extent of contamination.

Comment 6
In the Remediation Activities Section, *Assessment – Soil Confirmation Sampling Event, Soil Sampling,* page 7 of 8, the Permittee states, "[i]n addition, 15 soil samples were collected from excavated soils and sampled for benzene. All 15 samples were non-detect for benzene (Appendix E)." According to Appendix E, benzene was detected in soil samples identified as "Rail Pipe Excavated Soils" and "Rail Pipe Excavated Soils 2". In addition, the total petroleum hydrocarbons (TPH) – diesel range organics (DRO), and gasoline range organics (GRO) concentrations were recorded as 25,000 mg/kg and 1,800 mg/kg, respectively, in the soil sample designated as "Rail Pipe Excavated Soils". These concentrations exceeded TPH soil screening levels for industrial/construction workers; 3,800 mg/kg for TPH-DRO, and 500 mg/kg for TPH-GRO. Therefore, the statement does not justify not collecting confirmation samples. Also, the additional 15 soil samples should have been analyzed for TPH as wells.

In addition, although gasoline was released, TPH-DRO concentrations were detected from the waste characterization samples. It is not clear whether diesel was released in the vicinity of the spill prior to the gasoline release of May 7, 2017. Provide an explanation for the detected TPH-DRO concentrations in the response letter.

Comment 7
In the Conclusions and Recommendations Section, page 7 of 8, the Permittee states, "[o]n March 13, 2019, there was a diesel release in the same area beneath the pipe rack. Therefore, MPC recommends that soil confirmation samples be collected to determine if additional soil excavation is necessary prior to installation of the proposed concrete containment pad beneath the pipe rack." Provide a reference to the March 13, 2019 release in the response letter.

NMED concurs with the proposal of combining the investigations of March 13, 2019 and May 7, 2017 releases. However, the proposed sampling locations depicted in Figure 4, *Proposed Soil Confirmation Sample Locations,* must be adjusted to the areas where gasoline and diesel likely accumulated on the ground surface (e.g., topographically low areas).

Comment 8
In the Conclusions and Recommendations Section, page 8 of 8, the Permittee states, "[t]his comparison and the analytical results will be sent to NMED as a letter style report describing the sampling event, results, and further action if necessary." A work plan that addresses Comments 2, 4, and 5 must be submitted and approved prior to conducting the investigation. Revise the statement accordingly and provide a replacement page with the response letter.

Marathon Petroleum Company LP

January 6, 2020

Mr. Dave Cobrain, Program Manager
New Mexico Environmental Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87SOS-6303

RE: Response Action Report
DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest, Inc.)
EPA ID# NMD000333211
WRG-17-MISC

Dear Mr. Cobrain:

Marathon Petroleum Company LP (dba Western Refining Southwest, Inc.) Gallup Refinery is submitting this Response Action Report for Rail Car Loading Area Gasoline Release that occurred on May 7, 2017. The Response Action Report has been enclosed for your review. If there are any questions, please call Brian Moore at 505-726-9745.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of 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,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc C. Chavez NMOCD
B. Moore Marathon Gallup Refinery

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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www.env.nm.gov

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

APR 0 3 2020

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

RE: APPROVAL WITH MODIFICATIONS
RESPONSE ACTION REPORT TANK 35 – OILY WATER RELEASE
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-19-018

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Response Action Report Tank 35 – Oily Water Release* (Report), dated October 4, 2019, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications with the attached comments.

The Permittee must address all comments in the attachment and submit a response letter, and replacement pages no later than **July 31, 2020**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document does not constitute agreement with all information or every statement presented in the document.

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6046.

Sincerely,

Kevin Pierard
Chief
Hazardous Waste Bureau

cc: 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 2020 File
HWB-WRG-19-018

Attachment

Comment 1

In the Remediation Activities, *Assessment – Soil Confirmation Sampling Event,* page 5 of 14, the Permittee states, "[b]oth field screening and analytical sampling were completed to confirm contamination was removed. Soil samples were collected from six locations shown on Figure 5." According to Figure 5, *Tank 35 Soil Sample Locations,* soil sample T-35-2 was collected outside of the excavation area. All soil confirmation samples should have been collected within excavation floor or sides. Explain the basis for collecting confirmation sample T-35-2 outside of the excavation area and provide a justification in a response letter.

Comment 2

In the Conclusions and Recommendations, page 7 of 14, the Permittee states, "[t]he Refinery received heavy rainfall on July 29, 2017 and July 30, 2017. On July 30, 2017, Tank 35 began to overflow with oily water. The oily water flowed through the vents at the top of the tank and pooled inside the tank berm." Explain whether any contingency measures were implemented to prevent overflow from Tank 35 in case similar rain events occur in the future. If so, explain nature of the contingency measures in the response letter. Otherwise, explain why such measures are not necessary at this time (e.g., upgrading the wastewater treatment system).

Comment 3

Although the Conclusions and Recommendations, *Soil Confirmation Sampling Results,* page 7 of 14, adequately discussed the TPH exceedance of residential screening levels in the confirmation samples, the discussion regarding the exceedance of the soil screening level for a dilution and attenuation factor (DAF) of 20 for lead was not included. Include the discussion and provide a replacement page.

Comment 4

In the Conclusion and Recommendations, *Recommended Additional Excavation and Assessment*, page 7 of 14, the Permittee recommends no further action based on the TPH concentrations being below the industrial/occupational or construction worker screening levels. The Permittee must provide a justification for no further action relative to the lead concentrations that exceeded the soil screening level for a DAF of 20. Provide a replacement page that includes the discussion or propose to further investigate/remediate the lead exceedance detected in the excavation area, if appropriate.

RESPONSE ACTION REPORT

DGS 105 ADDITIVE TANK – RAIL CAR LOADING AREA – GASOLINE RELEASE

GALLUP REFINERY MARATHON PETROLEUM COMPANY, LP

GALLUP, NEW MEXICO

EPA ID# NMD000333211

Response Action Report Checklist

Included	NA	
☒	☐	**Title Page**
☒	☐	**Executive Summary**
☒	☐	**Report Checklist**
☒	☐	**Table of Contents**
☒	☐	**Section 1 - Introduction**
☒	☐	• General information about Gallup Refinery and Area of Release
☒	☐	• Description of the Release
☒	☐	• Characterization of Released Material
☒	☐	o Discussion of the Unit / Process / Area of Release (as applicable)
☒	☐	o Location of unit(s) on a topographic map of appropriate scale
☐	☒	o Designation of type and function of unit(s)
☐	☒	o General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings)
☐	☒	o Dates that the unit(s) was operated;
☐	☒	o Specifications of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous waste or hazardous constituents in the wastes
☐	☒	o All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground water data, soil analyses, air, and surface water data).
☒	☐	• Site Conditions That Affected Release
☒	☐	**Section 2 - Remediation Activities**
☒	☐	• Detailed discussion of remediation, what type of cleanup conducted, where was it conducted (GPS coordinates or measurements to physical site features), dimensions of excavation, volumes of remediation waste, characterization sampling, disposition of wastes
☒	☐	• Soil Sampling – detailed discussion of sample collection and analysis
☒	☐	• Soil Field Screening
☒	☐	• Subsurface soil sampling – detailed discussion on soil borings, sampling and analysis
☒	☐	• Groundwater Conditions – detailed discussion well installation and groundwater sample collection and analysis
☐	☒	**Section 3 – Regulatory Criteria Comparisons**
☐	☒	• Presentation of applicable regulatory screening criteria and comparison to site concentrations.
☒	☐	**Section 4 – Conclusions and Recommendations** • NMED Concurrence – No Further Action Required

		• Deferral – Release Area within Existing SWMU / AOC • Possible consideration for SWMU Assessment Report
☐	☒	Tables – Soil and/or Groundwater Data
☒	☐	Figures ☒ Figure – Affected Area - Topo Map ☒ Figure - Area Affected by Release – Aerial Photo ☒ Figure - Aerial Photo – Tank – Unit – Process Area ☒ Figure - Extent of Excavation Activities ☒ Figure - Sampling Locations (Soil, Wells, Surface Water)
☒	☐	Appendices
☒	☐	• Appendix – Analytical
☒	☐	• Appendix – Photos
☒	☐	• Appendix – Waste Manifests
☐	☒	• Appendix – Calculations for Reportable Quantities
☒	☐	• Appendix – Form C-141 Release Notification and Corrective Action
☐	☒	• Appendix – Boring Logs/Monitoring Well Completion Logs
☐	☒	• Appendix – Standard Operating Procedures
☐	☒	• Appendix – Field Methods / Sampling Procedures

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Executive Summary

The Marathon Petroleum Company Gallup Refinery (Refinery) experienced a gasoline release May 7, 2017. This Response Action Report provides the details for the approximately 8,900-gallon rail car loading area gasoline release. An open gasoline pipeline additive valve adjacent to the DGS 105 additive tank was determined to be responsible for the release.

A vacuum truck was used to recover the estimated 8,900 gallons of gasoline. The recovered gasoline was placed into the slop tank at the Refinery. Approximately 153 tons of spill area soil was excavated and delivered to Valencia Regional Landfill in Los Lunas, New Mexico for disposal. Soil confirmation samples were not collected in the spill area.

Introduction

The 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 Refinery property covers approximately 810 acres and is shown on Figure 1, including the rail car loading area. The rail car loading area transports various products from the Refinery to distributors.

General Information

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

Description of the Release

At 8:00 am on May 7, 2017, an operator observed hydrocarbon product pooling beneath the pipe rack located along the rail car loading area's west side (Figure 2). The hydrocarbon product was also observed flowing into a sewer box between the pipe rack and the rail car loading area. Notifications were immediately made to the off-site supervisor, Kurtz Fire Department, the Maintenance Department, and the Environmental Department.

The Refinery's on-site laboratory analyzed a hydrocarbon sample from the release verifying that the product was gasoline. The Maintenance Department used a vacuum truck to recover the gasoline product from the sewer box. After the sewer box fluid level decreased, it was observed that a 3/4-inch valve from a gasoline pipeline was open near the DGS 105 additive tank and discharging into the sewer cup. The DGS 105 additive tank valves were immediately closed to stop the flow of gasoline into the box. The sewer cup had overflowed onto the soil located beneath the pipe rack and into a sewer drain between the pipe rack and railroad tracks. The sewer drain was accessed from the rail rack sump box north of the release extent and pipe box.

The overflow was generally contained inside the 41 foot by 97 foot bermed area surrounding the pipe rack as it flowed in a south, south-easterly direction (Figure 2). Approximately three vacuum truckloads of gasoline were collected from this area and the sump box located north of the pipe rack. An estimated 8,900 gallons of

recovered gasoline were placed in the slop tank. Clean-up activities outside the containment areas were not conducted because the spill generally was contained inside the bermed area.

The New Mexico Environment Department (NMED) Hazardous Waste Bureau and the Oil Conservation Division were notified of the spill via email (Appendix A) at 5:03 pm on May 8, 2017. No personnel injuries were reported, and no fires occurred due to this release. An initial written report (Form C-141) was completed on August 30, 2017 (Appendix A) and submitted to NMED. Photographs of the release area are provided in Appendix B.

Characterization of the Release Material

Laboratory analysis by the refinery determined the released material was gasoline, however no additional confirmation sampling was conducted. A copy of the gasoline Safety Data Sheet (SDS) is included in Appendix C.

Description of the Release Area

The rail car loading rack and associated pipe rack are located on the Refinery's east side (Figure 1). The DGS 105 additive tank is located immediately north and adjacent to the pipe rack (Figure 2). The release occurred when a partially open 3/4-inch valve on the gasoline pipeline near the DGS 105 additive tank allowed gasoline to flow into the containment area beneath the additive tank and pipe rack. The gasoline flowed in a southerly to south-easterly direction towards the sewer sump next to the railroad loading rack.

Site Conditions that Impacted the Release

Topographic features at the Refinery include high ground in the southeast that gradually decreases to lowland fluvial plain in the northwest. Elevations on the Refinery property range from 7,040 feet (ft) to 6,860 ft above mean sea level (amsl). The rail car loading area is approximately 6,935 ft amsl. Because the release was retained primarily within the containment area, the site topography directed the flow towards the sewer pump and not to other areas of the Refinery.

Remediation Activities

Remediation activities consist of the actions taken by plant personnel to address the release and mitigate any further contact of the released material with the surrounding area including the subsurface and surficial waters

Remediation

The initial remediation consisted of recovering 8,900 gallons of gasoline using a vacuum truck. At the time of the release, a concrete pad was assumed to be beneath the pipe rack. Upon further inspection, it was determined that no concrete pad existed beneath the pipe rack; therefore, soil excavation was initiated. Following removal of the surface gasoline, approximately 153 tons of petroleum impacted soils below the pipe rack were excavated to an 18-inch depth in an area approximately 41 feet by 97 feet (Figure 3) in November of 2018. Three soil samples from the excavated soils were collected from the waste bins for waste characterization. The analytical results indicated that the soils were non-hazardous. An additional 15 soil samples were collected from the waste bins and analyzed for benzene only. The 15 samples were non-detect for benzene. The non-hazardous soils were transported as petroleum contaminated soils to Valencia Regional Landfill in Los Lunas, New Mexico. The waste

manifests are presented in Appendix D and the waste analytical results are presented in Appendix E. Soil confirmation samples following the excavation were not collected.

Assessment – Soil Confirmation Sampling Event

Soil Sampling

Confirmation samples were not collected due to the release being largely contained by the sump and the containment area beneath the pipe rack. In addition, 15 soil samples were collected from excavated soils and sampled for benzene. All 15 samples were non-detect for benzene (Appendix E).

Confirmation sampling location selection

As stated above, no confirmation samples were collected.

Soil Sampling Analytical Results

As stated above, no soil confirmation samples were collected.

Subsurface Soil Conditions

No soil borings or monitoring wells were installed during the investigation due to the release being largely contained by the sump and the containment area beneath the pipe rack.

Groundwater Conditions

A groundwater investigation was not conducted for the release due to the release being largely contained by the sump and the containment area beneath the pipe rack.

Surface Water Conditions

The release was contained in the sump and pipe rack containment. Therefore, the release did not reach surface water.

Surface Air and Subsurface Vapor Conditions

A vapor release was not associated with this product release.

Conclusions and Recommendations

The release remediation consisted of recovering 8,900 gallons of gasoline. In November 2018, approximately 153 tons of petroleum impacted soils beneath the pipe rack were excavated to 18 inches below ground surface. Based on the analytical data from the waste sampling, it was not anticipated that the release extended further into the subsurface. Soil confirmation samples were not collected at that time. Without confirmation sampling though, this assumption cannot be confirmed. On March 13, 2019, there was a diesel release in the same area beneath the pipe rack. Therefore, MPC recommends that soil confirmation samples be collected to determine if additional soil excavation is necessary prior to installation of the proposed concrete containment pad beneath the pipe rack.

The six proposed soil confirmation sample locations are shown on (Figure 4). The actual sample locations will depend upon accessibility beneath the pipe rack. The soil samples will be analyzed for diesel range organics and

motor oil organics by EPA Method 8015M/D; gasoline range organics by EPA Method 8015D; polyaromatic hydrocarbons by EPA Method 8310; volatile organic compounds by EPA Method 8260B/1311; Toxicity Characteristic Leaching Procedure (TCLP) metals by EPA Method 6010B: TCLP mercury by EPA Method 7470/7471; and anions by EPA Method 300.0.

The soil confirmation sampling results will be compared to NMED screening levels to determine if further excavation is necessary. This comparison and the analytical results will be sent to NMED as a letter style report describing the sampling event, results, and further action if necessary.

Figures

RAIL CAR LOADING RACK

EXPLANATION

TANK

RAIL CAR LOADING RACK

-----7220----- SURFACE CONTOURS (1 FOOT INTERVAL)

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

0 400'

N

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Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1

LOCATION MAP

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 8/12/19	File: 697-RAILCARLOADINGRACK-RELEASE-201902

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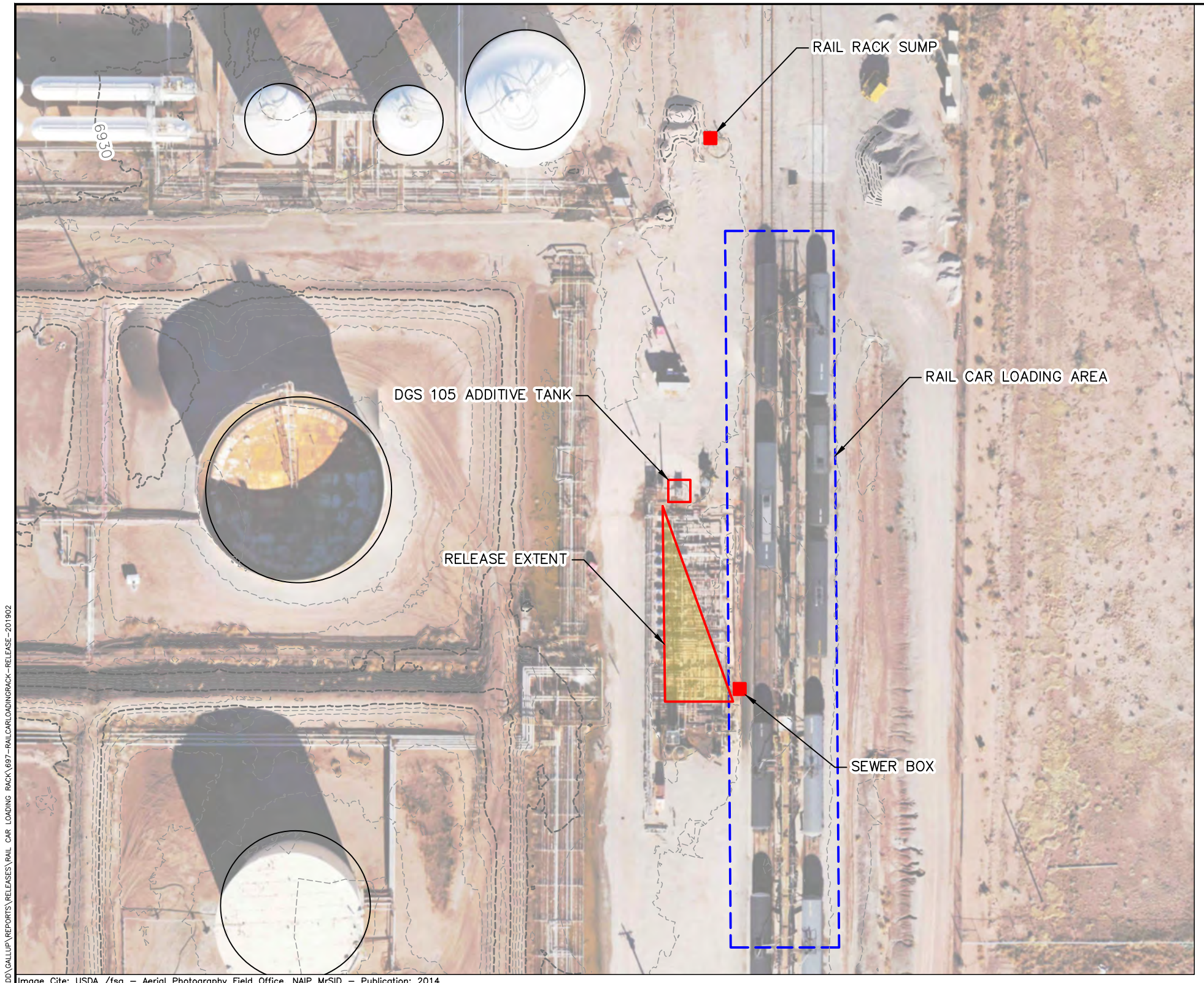

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 RELEASE EXTENT
SCALE: 1" = 100'
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EXPLANATION

- TANK
- RAIL CAR LOADING RACK
- RELEASE EXTENT
- DGS 105 ADDITIVE TANK
- RAIL RACK SUMP OR SEWER BOX

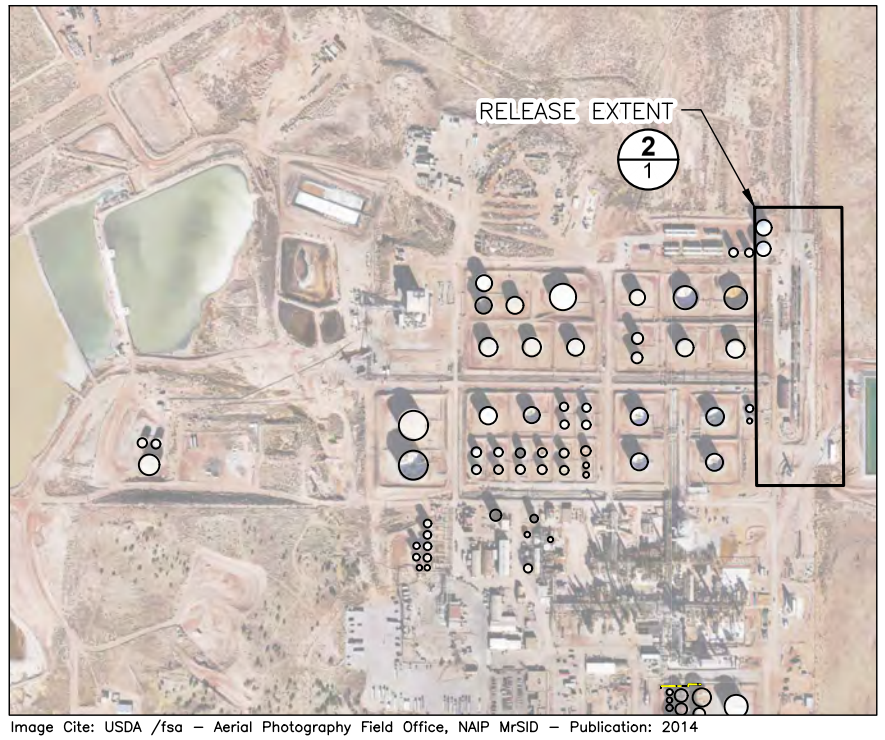

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP
SCALE: 1" = 800'
0 800'

N

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Laramie, Wyoming 82070
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(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

RELEASE EXTENT

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 8/12/19	File: 697-RAILCARLOADINGRACK-RELEASE-201902

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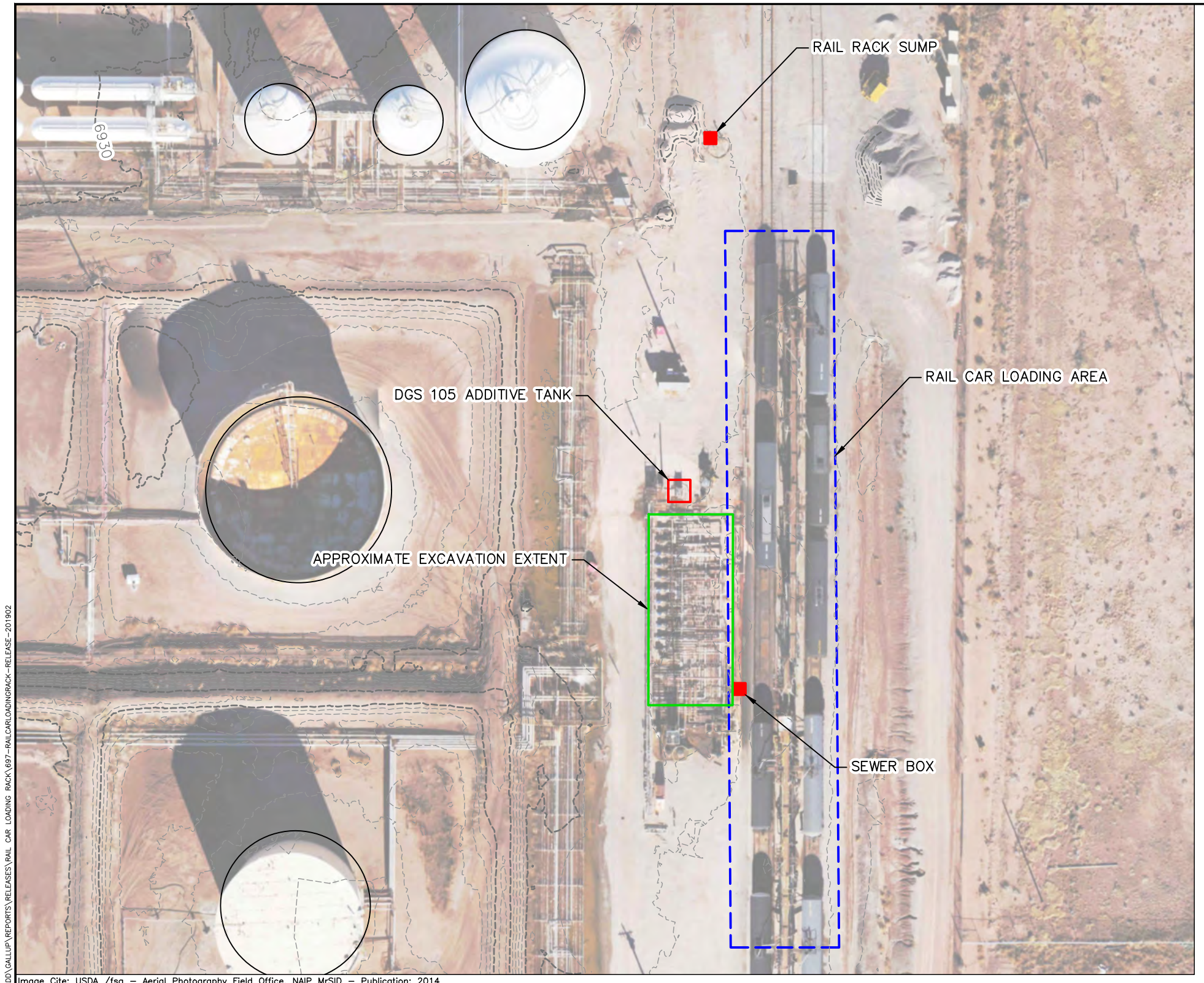

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 EXCAVATION EXTENT
SCALE: 1" = 100'
0 60'

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EXPLANATION

- TANK
- RAIL CAR LOADING RACK
- EXCAVATION EXTENT
- DGS 105 ADDITIVE TANK
- RAIL RACK SUMP OR SEWER BOX

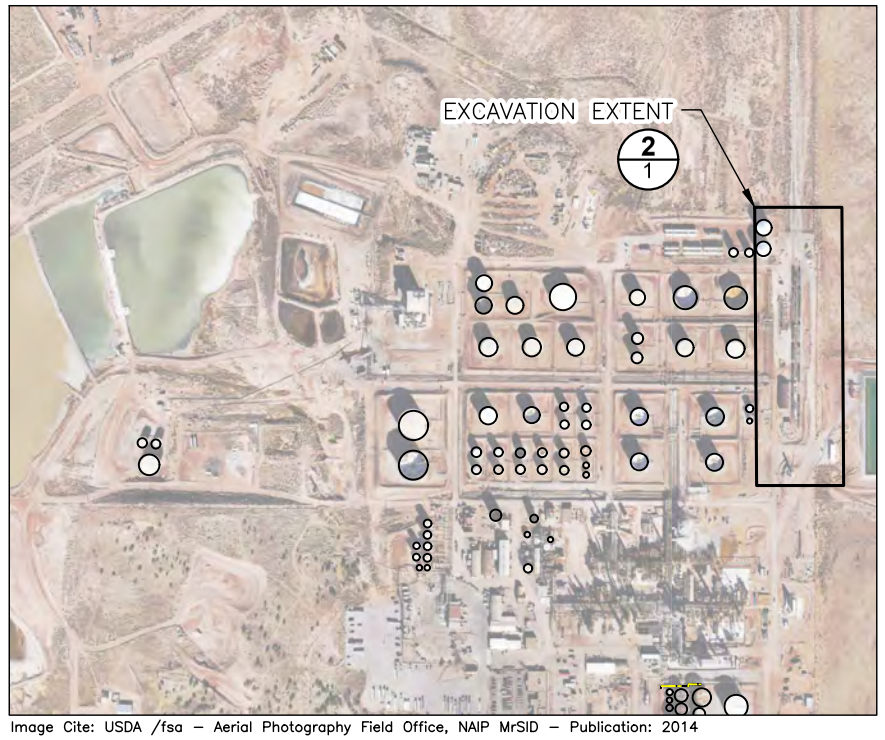

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP
SCALE: 1" = 800'
0 800'

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FIGURE 3

EXCAVATION EXTENT

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 5/7/19	File: 697-RAILCARLOADINGRACK-RELEASE-201902

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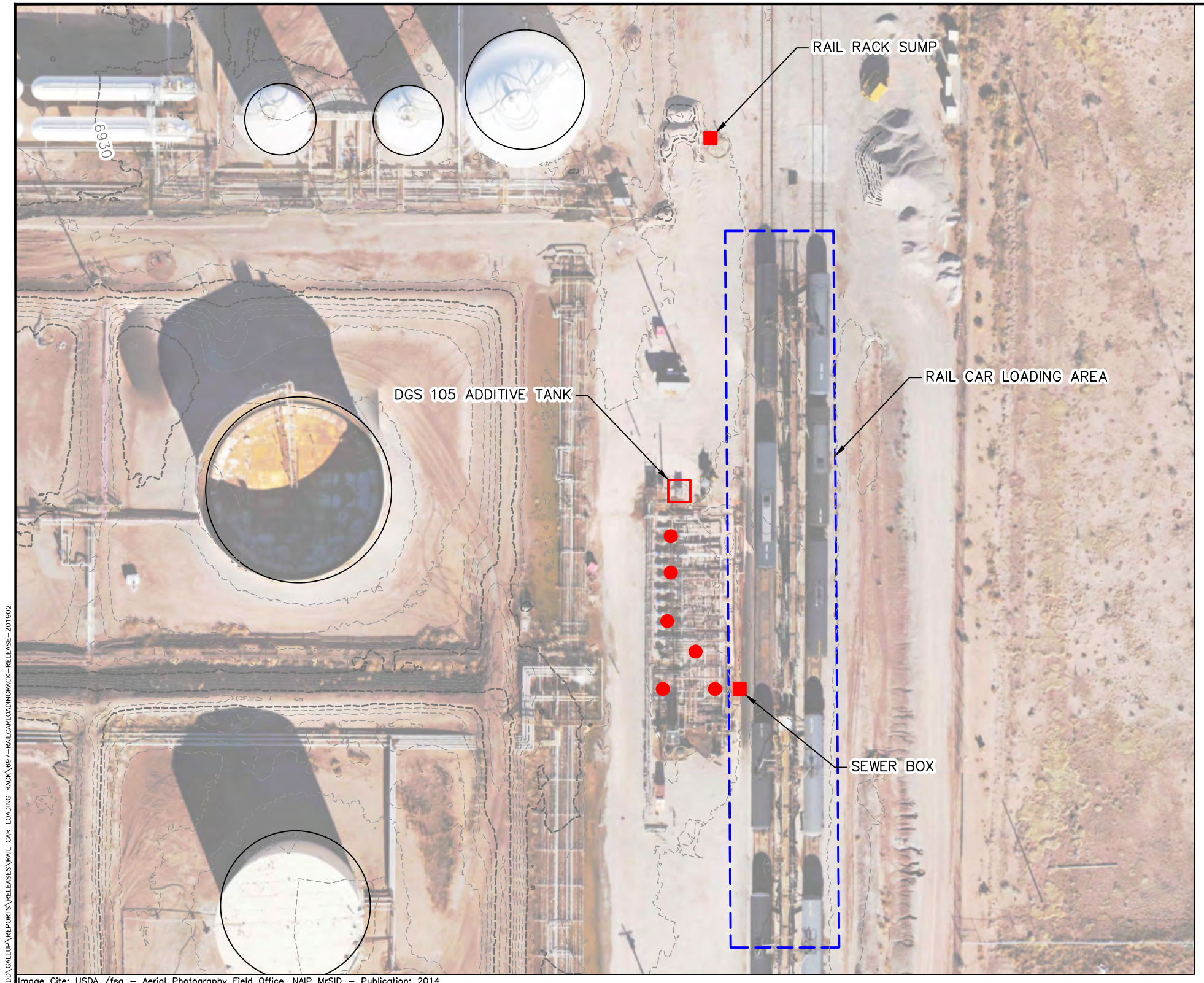

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 PROPOSED SOIL CONFIRMATION SAMPLE LOCATIONS
SCALE: 1" = 100'
0 60'

N

EXPLANATION

- TANK
- RAIL CAR LOADING RACK
- DGS 105 ADDITIVE TANK
- RAIL RACK SUMP OR SEWER BOX
- PROPOSED SOIL CONFIRMATION SAMPLE LOCATIONS

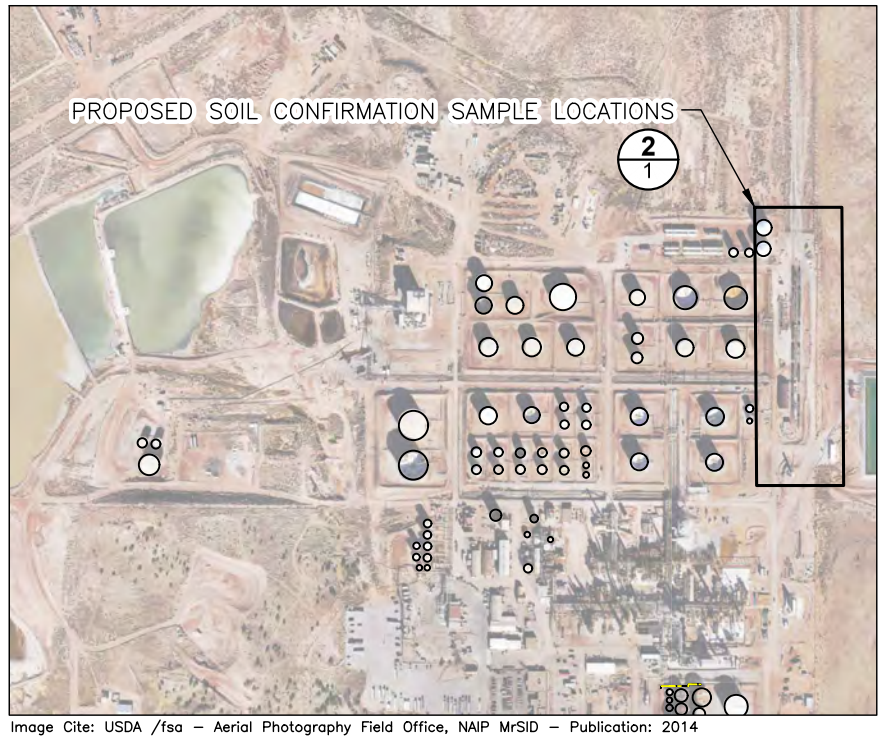

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP
SCALE: 1" = 800'
0 800'

N

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FIGURE 4

PROPOSED SOIL CONFIRMATION SAMPLE LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 5/7/19	File: 697-RAILCARLOADINGRACK-RELEASE-201902

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Appendix A
Notification Documents

From:	Johnson, Cheryl
To:	Carl Chavez; VanHorn, Kristen, NMENV; Cory.Smith@state.nm.us
Cc:	Hains, Allen; Bailey, William
Subject:	RRR Gasoline Leak
Date:	Monday, May 08, 2017 5:03:48 PM
Attachments:	image001.gif

Carl, Kristen:
Just a follow –up on the gasoline spill that occurred yesterday. The spill was discovered at 8:00 AM when the rail loader noticed gasoline pooling under the pipe rack at the railroad rack (booster pump area) and flowing into a sewer box. Some gasoline spilled to ground surface but contained within the area into the sewer boxes. Offsites supervisor was immediately notified and Kurtz fire department was also called out as a precautionary measure. After lowering level in the sewer box, it was discovered that a ¾" valve was in the open position on the DGS 105 additive tank. A total of 3 loads was vacuumed out of the sewer boxes – with an estimated total of 8900 gallons of 89 Octane recovered via vacuum truck. Clean up continues in this area.
No personal injuries and no fires reported with this incident.
Date of Incident: May 7, 2017
Discovered: 8:00AM
Area: RRR Booster pump area
Source: ¾" valve off of the DGS additive tank system
Weather Conditions: Breezy, clear to partly cloudy
Checked wind conditions at 11:30am: 14mph SE (10 min average = 15 mph)
Latitude: 35°29'28.56" N
Longitude: 108°25'24.24"W

If you have any questions or require further information please contact Mr. Bill Bailey, Environmental Supervisor (505) 726-9743.

cj

Cheryl Johnson
Environmental Specialist

Western Refining - Gallup Refinery
92 Giant Crossing Road
Gallup, NM 87301
505 722 0231 Direct
505 863-0930 Fax
505 722 3833 Main
cheryl.johnson@wnr.com

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Western Refining	Contact: Cheryl Johnson
Address: I-40 Exit 39, Jamestown, NM 87347	Telephone No: 505 722 0231
Facility Name: Gallup Refinery	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	**15N**	**15W**					**McKinley**

Latitude 35°29'28.56"N Longitude 108°25'24.24"W NAD83

NATURE OF RELEASE

Type of Release: Gasoline spill (89 Octane)	Volume of Release: Estimated at 8900 gallons of gasoline	Volume Recovered: 89,000 gallons of gasoline recovered via vacuum truck.
Source of Release: Valve left open to sewer	Date and Hour of Occurrence: 05/07/17 @ 0800 hours	Date and Hour of Discovery: 05/07/17 @ 0800 hours
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? C Chavez/OCD; K VanHorn/NMED-HWB; B Powell/OCD; C Smith/NMED	
By Whom? Cheryl Johnson	Date and Hour: 05/07/17 @ 1145 hrs	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*At 0800 hours, operator noticed gasoline pooling underneath the pipe rack located on the west side of the rail car loading area. Operator observed that gasoline had pooled in and around the pipe rack area and was flowing into the sewer box located near the railcar loading area. Offsites supervisor, Kurtz and Environmental were immediately notified. Maintenance was also contacted to begin vacuuming out sewer box. When level in sewer box was lowered it was observed that a ¾" valve going into a sewer cup was draining (valve was in the open position). Valve(s) were immediately closed at the gasoline additive tank. The sewer cup overflowed onto a concrete pad underneath the pipe rack and into a sewer drain. Temperature 45˚F, calm, partly cloudy. No personnel injuries were reported and no fires occurred from this incident.

Describe Area Affected and Cleanup Action Taken.*The overflow was contained inside a concrete berm underneath the pipe rack which then flowed in a south, south-easterly direction towards a sewer drain (Figure 1, #2). The overflow was pumped out using a vacuum truck and approximately three loads was collected from this area as well as from the sump box located on the north side of the pipe rack (Figure 1. #3). A sample of the product was collected and analyzed in our Gallup Facility Laboratory to verify product. An estimated 8900 gallons of gasoline was picked up via vacuum truck and placed back into the process at the slop tank. Clean-up activities were not immediately initiated as the majority of the spill was contained inside a concrete pad.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Cheryl Johnson	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: Cheryl.A.johnson@Andeavor.com	Conditions of Approval:	Attached ☐
Date: 8/30/2017 Phone:505-722-0231		

* Attach Additional Sheets If Necessary

FIGURE 1


T-563
T-562
Rail Rack Sump
N
Additive Tank - Source of Leak
Rail Car Loading Area
Area of Spill
Sewer Box
T-581
T-582
217 ft
Imagery Date: 3/18/2015 1997
35° 29'28.68" N 108° 25'23.40" W elev 6942 ft
Eye alt 7888 ft
Google earth

Appendix B
Photographs of Release

Gasoline Release - Sewer Box - Looking South

Gasoline Release - Pipe Rack - Looking West

Gasoline Release - Pipe Rack - Looking North

Appendix C
Safety Data Sheet – Gasoline

SAFETY DATA SHEET

~~Western Refining Gasoline (All Grades)~~

Section 1. Identification

GHS product identifier : Western Refining Gasoline (All Grades)

Other means of identification : Regular Unleaded Gasoline, Midgrade Unleaded Gasoline, Premium Unleaded Gasoline, Ethanol-Enhanced Gasoline, Precertified Gasoline

Relevant identified uses of the substance or mixture and uses advised against

This SDS applies to: Federal Reformulated Gasoline, California Reformulated Gasoline, Wintertime Oxygenated Gasoline, Low RVP Gasoline and Conventional Gasoline.

Supplier's details : Western Refining Company LP
123 W. Mills Avenue
El Paso, TX 79901
Tel: 915-534-1488

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3877 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION [Fertility] - Category 2
TOXIC TO REPRODUCTION [Unborn child] - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1
AQUATIC TOXICITY (ACUTE) - Category 3
AQUATIC TOXICITY (CHRONIC) - Category 2

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
Causes serious eye irritation.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May be fatal if swallowed and enters airways.
May cause drowsiness and dizziness.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Regular Unleaded Gasoline, Midgrade Unleaded Gasoline, Premium Unleaded Gasoline, Ethanol-Enhanced Gasoline, Precertified Gasoline

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	%	CAS number
Gasoline	90 - 100	86290-81-5
Contains:		
Xylene	0.5 - 15	1330-20-7
Toluene	0.5 - 15	108-88-3
Ethyl Alcohol	0.1 - 10	64-17-5
n-Hexane	0.5 - 5	110-54-3
Benzene	0.1 - 4.9	71-43-2
1,2,4-Trimethylbenzene	0.5 - 4	95-63-6
Ethylbenzene	0.1 - 3	100-41-4
Naphthalene	0.1 - 2	91-20-3

Section 3. Composition/information on ingredients

Cumene	0 - 0.1	98-82-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if symptoms occur.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
: nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet or water-based fire extinguishers.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

MSDS pro your trusted partners for global regulatory compliance

Section 6. Accidental release measures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

United States

Ingredient name	Exposure limits
Gasoline	**ACGIH TLV (United States, 3/2012).** TWA: 300 ppm 8 hours. TWA: 890 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 1480 mg/m³ 15 minutes.
Xylene	**ACGIH TLV (United States, 3/2012).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 6/2010).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.
Toluene	**NIOSH REL (United States, 6/2009).** STEL: 560 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m³ 10 hours. TWA: 100 ppm 10 hours. **OSHA PEL Z2 (United States, 11/2006).** AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours. **ACGIH TLV (United States, 3/2012).** TWA: 20 ppm 8 hours.
Ethyl Alcohol	**ACGIH TLV (United States, 3/2012).** STEL: 1000 ppm 15 minutes. **NIOSH REL (United States, 6/2009).** TWA: 1900 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. **OSHA PEL (United States, 6/2010).** TWA: 1900 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.
n-Hexane	**ACGIH TLV (United States, 3/2012). Absorbed through skin.** TWA: 50 ppm 8 hours. **NIOSH REL (United States, 6/2009).** TWA: 180 mg/m³ 10 hours. TWA: 50 ppm 10 hours. **OSHA PEL (United States, 6/2010).** TWA: 1800 mg/m³ 8 hours. TWA: 500 ppm 8 hours.
Benzene	**ACGIH TLV (United States, 3/2012). Absorbed through skin.** STEL: 8 mg/m³ 15 minutes. STEL: 2.5 ppm 15 minutes. TWA: 1.6 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. **NIOSH REL (United States, 6/2009).** STEL: 1 ppm 15 minutes. TWA: 0.1 ppm 10 hours. **OSHA PEL (United States, 6/2010).** STEL: 5 ppm 15 minutes. TWA: 1 ppm 8 hours. **OSHA PEL Z2 (United States, 11/2006).** AMP: 50 ppm 10 minutes. CEIL: 25 ppm TWA: 10 ppm 8 hours.
1,2,4-Trimethylbenzene	**ACGIH TLV (United States, 3/2012).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours. **NIOSH REL (United States, 6/2009).** TWA: 125 mg/m³ 10 hours. TWA: 25 ppm 10 hours.

Section 8. Exposure controls/personal protection

Ethylbenzene	**OSHA PEL 1989 (United States, 3/1989).** TWA: 25 ppm 8 hours. TWA: 125 mg/m³ 8 hours. **ACGIH TLV (United States, 3/2012).** TWA: 20 ppm 8 hours. **NIOSH REL (United States, 6/2009).** STEL: 545 mg/m³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 435 mg/m³ 10 hours. TWA: 100 ppm 10 hours. **OSHA PEL (United States, 6/2010).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
Naphthalene	**ACGIH TLV (United States, 3/2012). Absorbed through skin.** STEL: 79 mg/m³ 15 minutes. STEL: 15 ppm 15 minutes. TWA: 52 mg/m³ 8 hours. TWA: 10 ppm 8 hours. **NIOSH REL (United States, 6/2009).** STEL: 75 mg/m³ 15 minutes. STEL: 15 ppm 15 minutes. TWA: 50 mg/m³ 10 hours. TWA: 10 ppm 10 hours. **OSHA PEL (United States, 6/2010).** TWA: 50 mg/m³ 8 hours. TWA: 10 ppm 8 hours.
Cumene	**ACGIH TLV (United States, 3/2012).** TWA: 50 ppm 8 hours. **NIOSH REL (United States, 6/2009). Absorbed through skin.** TWA: 245 mg/m³ 10 hours. TWA: 50 ppm 10 hours. **OSHA PEL (United States, 6/2010). Absorbed through skin.** TWA: 245 mg/m³ 8 hours. TWA: 50 ppm 8 hours.

Mexico

Ingredient name	Exposure limits
Gasoline	**ACGIH TLV (United States, 3/2012).** TWA: 300 ppm 8 hours. TWA: 890 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 1480 mg/m³ 15 minutes.
Xylene	**NOM-010-STPS (Mexico, 9/2000).** LMPE-PPT: 435 mg/m³ 8 hours. LMPE-PPT: 100 ppm 8 hours. LMPE-CT: 655 mg/m³ 15 minutes. LMPE-CT: 150 ppm 15 minutes.
Toluene	**NOM-010-STPS (Mexico, 9/2000). Absorbed through skin.** LMPE-PPT: 188 mg/m³ 8 hours. LMPE-PPT: 50 ppm 8 hours.
Ethyl Alcohol	**NOM-010-STPS (Mexico, 9/2000).** LMPE-PPT: 1900 mg/m³ 8 hours. LMPE-PPT: 1000 ppm 8 hours.
n-Hexane	**NOM-010-STPS (Mexico, 9/2000).** LMPE-PPT: 176 mg/m³ 8 hours. LMPE-PPT: 50 ppm 8 hours.
Benzene	**NOM-010-STPS (Mexico, 9/2000).** LMPE-CT: 16 mg/m³ 15 minutes. LMPE-CT: 5 ppm 15 minutes. LMPE-PPT: 3.2 mg/m³ 8 hours. LMPE-PPT: 1 ppm 8 hours.
1,2,4-Trimethylbenzene	**NOM-010-STPS (Mexico, 9/2000).** LMPE-CT: 170 mg/m³ 15 minutes. LMPE-CT: 35 ppm 15 minutes. LMPE-PPT: 125 mg/m³ 8 hours. LMPE-PPT: 25 ppm 8 hours.

Section 8. Exposure controls/personal protection

Ethylbenzene	**NOM-010-STPS (Mexico, 9/2000).** LMPE-CT: 545 mg/m³ 15 minutes. LMPE-CT: 125 ppm 15 minutes. LMPE-PPT: 435 mg/m³ 8 hours. LMPE-PPT: 100 ppm 8 hours.
Naphthalene	**NOM-010-STPS (Mexico, 9/2000).** LMPE-CT: 75 mg/m³ 15 minutes. LMPE-CT: 15 ppm 15 minutes. LMPE-PPT: 50 mg/m³ 8 hours. LMPE-PPT: 10 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Colorless to yellow.

Odor : Petroleum.

Odor threshold : Not available.

Section 9. Physical and chemical properties

pH	:	Not available.
Melting point	:	Not available.
Boiling point	:	Not available.
Flash point	:	Closed cup: <-40°C (<-40°F) [Tagliabue.]
Burning time	:	Not applicable.
Burning rate	:	Not applicable.
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Lower: 1.3% Upper: 7.6%
Vapor pressure	:	34.5 to 103.4 kPa (258.55 to 775.66 mm Hg) [20°C] (5 psi - 15 psi @ 37.8°C (100°F))
Vapor density	:	3 to 4 [Air = 1]
Relative density	:	0.7 to 0.8
Solubility	:	Insoluble in the following materials: cold water and hot water.
Solubility in water	:	Not available.
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	257.22°C (495°F)
Decomposition temperature	:	Not available.
SADT	:	Not available.
Viscosity	:	<1 SUS @ 37.8°C (100°F)

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	:	Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LD50 Oral	Rat	13.6 g/kg	-
Xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Ethyl Alcohol	LC50 Inhalation Vapor	Rat	124700 mg/m³	4 hours
	LD50 Oral	Rat	7 g/kg	-
n-Hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
Benzene	LD50 Oral	Rat	930 mg/kg	-
1,2,4-Trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
	LD50 Oral	Rat	5 g/kg	-
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
Naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-
Cumene	LC50 Inhalation Vapor	Rat	39000 mg/m³	4 hours
	LD50 Oral	Rat	1400 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 µL	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	100%	-
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Mild irritant	Rabbit	-	870 µg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Pig	-	24 hours 250 µL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
Ethyl Alcohol	Eyes - Moderate irritant	Rabbit	-	100 µL	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 mg	-
	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	400 mg	-
n-Hexane	Eyes - Mild irritant	Rabbit	-	10 mg	-
Benzene	Eyes - Moderate irritant	Rabbit	-	88 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 µL	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Naphthalene	Skin - Mild irritant	Rabbit	-	495 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 0.05 mL	-
Cumene	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 mg	-
	Eyes - Mild irritant	Rabbit	-	86 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

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Section 11. Toxicological information

Classification

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Xylene	-	3	A4	-
Toluene	-	3	A4	-
Benzene	+	1	A1	Known to be a human carcinogen.
Ethylbenzene	-	2B	A3	-
Naphthalene	-	2B	A4	Reasonably anticipated to be a human carcinogen.
Cumene	-	2B	-	-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects
n-Hexane	Category 3	Not applicable.	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	Not determined	Not determined
n-Hexane	Category 2	Not determined	Not determined
Benzene	Category 1	Not determined	Not determined

Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
n-Hexane	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

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Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause genetic defects.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	10837.6 mg/kg
Dermal	7333.3 mg/kg
Inhalation (gases)	33333.3 ppm
Inhalation (vapors)	202 mg/L

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Xylene	Acute IC50 10 mg/L	Algae	72 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Toluene	Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 500000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
Ethyl Alcohol	Acute EC50 17.921 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franchiscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
n-Hexane	Acute LC50 113000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
Benzene	Acute EC50 29000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 1600000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute EC50 9230 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 21000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
	Acute LC50 5.28 ul/L Fresh water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
	Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	4 weeks
1,2,4-Trimethylbenzene	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pectinicrus - Adult	48 hours
Ethylbenzene	Acute LC50 22.4 mg/L Fresh water	Fish - Tilapia zillii	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2970 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 5200 µg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Naphthalene	Chronic NOEC 1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 1600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Cumene	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11200 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Gasoline	2 to 7	-	high
Xylene	3.16	-	low
Toluene	2.69	8.317637711	low
Ethyl Alcohol	-0.32	-	low
n-Hexane	3.9	-	low
Benzene	2.13	4.265795188	low
1,2,4-Trimethylbenzene	3.8	120.226443461	low
Ethylbenzene	3.1	-	low
Naphthalene	3.3	85.11380382	low
Cumene	3.66	35.481338923	low

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{OC}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220
Xylene	1330-20-7	Listed	U239
Benzene	71-43-2	Listed	U019
Naphthalene	91-20-3	Listed	U165

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1203	UN1203	UN1203
UN proper shipping name	GASOLINE	GASOLINE. Marine pollutant (n-Hexane, Benzene)	GASOLINE
Transport hazard class(es)	3 	3 	3 
Packing group	II	II	II
Environmental hazards	Yes.	Yes.	No.
Additional information	-	**Emergency schedules (EmS)** F-E, S-E	-

AERG : 128

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: Naphthalene
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): Not determined.
Clean Water Act (CWA) 307: Toluene; Benzene; Ethylbenzene; Naphthalene
Clean Water Act (CWA) 311: Toluene; Xylene; Benzene; Ethylbenzene; Naphthalene

: Listed

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Listed

DEA List II Chemicals (Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Gasoline	90 - 100	Yes.	No.	No.	No.	No.
Xylene	5 - 15	Yes.	No.	No.	Yes.	No.
Toluene	5 - 15	Yes.	No.	No.	Yes.	Yes.
Ethyl Alcohol	0.1 - 10	Yes.	No.	No.	Yes.	No.
n-Hexane	0.5 - 5	Yes.	No.	No.	Yes.	Yes.
Benzene	0.1 - 4.9	Yes.	No.	No.	Yes.	Yes.
1,2,4-Trimethylbenzene	0.5 - 4	Yes.	No.	No.	Yes.	No.
Ethylbenzene	0.1 - 3	Yes.	No.	No.	Yes.	Yes.
Naphthalene	0.1 - 2	No.	No.	No.	Yes.	Yes.
Cumene	0 - 0.1	Yes.	No.	No.	Yes.	Yes.

Section 15. Regulatory information

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Xylene Toluene n-Hexane Benzene 1,2,4-Trimethylbenzene Ethylbenzene Naphthalene	1330-20-7 108-88-3 110-54-3 71-43-2 95-63-6 100-41-4 91-20-3	0.5 - 15 0.5 - 15 0.5 - 5 0.1 - 4.9 0.5 - 4 0.1 - 3 0.1 - 2
Supplier notification	Xylene Toluene n-Hexane Benzene 1,2,4-Trimethylbenzene Ethylbenzene Naphthalene	1330-20-7 108-88-3 110-54-3 71-43-2 95-63-6 100-41-4 91-20-3	0.5 - 15 0.5 - 15 0.5 - 5 0.1 - 4.9 0.5 - 4 0.1 - 3 0.1 - 2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Toluene; Xylene; Ethyl Alcohol; n-Hexane; Benzene; 1,2,4-Trimethylbenzene; Ethylbenzene; Naphthalene

New York : The following components are listed: Toluene; Xylene; n-Hexane; Benzene; Ethylbenzene; Naphthalene; Cumene

New Jersey : The following components are listed: Toluene; Xylene; Ethyl Alcohol; n-Hexane; Benzene; 1,2,4-Trimethylbenzene; Ethylbenzene; Naphthalene; Cumene

Pennsylvania : The following components are listed: Gasoline; Toluene; Xylene; Ethyl Alcohol; n-Hexane; Benzene; 1,2,4-Trimethylbenzene; Ethylbenzene; Naphthalene; Cumene

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)
Benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Naphthalene	Yes.	No.	Yes.	No.
Cumene	Yes.	No.	No.	No.

Mexico Classification :

International regulations

Section 15. Regulatory information

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Section 16. Other information

History

Date of issue mm/dd/yyyy : 06/30/2013

Date of previous issue : 05/30/2012

Version : 4

Revised Section(s) : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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Appendix D
Waste Manifest

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD000333211

Manifest Document No. D226466

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone 505 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO
6. US EPA ID Number: CAR000070540

A. State Transporter's ID
B. Transporter 1 Phone

7. Transporter 2 Company Name
8. US EPA ID Number

C. State Transporter's ID
D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID
F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	~~EU 26.16~~ 9.50 19900 lbs	TON
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above — Project Number 189149 Document #: D226466

1) 104423NM WEW-________

H. Handling Codes for Wastes Listed Above

RECEIVED MAR 5 2019

ROC 05 23.20

15. Special Handling Instructions and Additional Information

24 hour emergency contact: CHEMTREC 800-424-9300

#8893 Soil farm

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: ALVIN Dorsey — Signature: [signature] — Date: Month 01 Day 22 Year 19

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Eugene Vigil — Signature: [signature] — Date: Month 01 Day 22 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

PCS 2

N: 34° 43. ~~445~~ W: 107° 02 ~~3~~ 84 Elev: ~~5607~~ 5450

Printed/Typed Name: Doris Gilman — Signature: Doris [signature] — Date: Month 1 Day 2 Year 19

GENERATOR / TRANSPORTER / FACILITY

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

043A

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD000333211

Manifest Document No. 18214C

2. Page 1 of

3. Generator's Name and Mailing Address HWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	DM	12.17 24140	TON
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
Project Number 159140 Document # D226466
104423NM WEW-

H. Handling Codes for Wastes Listed Above
PC 20

15. Special Handling Instructions and Additional Information
hour emergency contact CHEMTREC 800-424-9300

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
ALVIN Doisey		01	24	19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
		1	24	19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST 043A

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221132

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	15,98	TON
b.				
c.				
d.				

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G. Additional Descriptions for Materials Listed Above: Project Number 184688 Document #: D221132
1) 104423NM WEW-_____

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

3

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
Janelle Vestal		12	6	18

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Luis Gurule		12	6	18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PCS-2 N: 34° 43.287 W: 107° 02.514 Elev. 5485

Printed/Typed Name	Signature	Date Month	Day	Year
Arthur Cutnaw		12	7	18

NON-HAZARDOUS WASTE — GENERATOR — TRANSPORTER — FACILITY

NON-HAZARDOUS WASTE MANIFEST

6432

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

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NMD000333211	Manifest Document No. D221120	2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505) 726 9721

5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID
Advanced Chemical Transport Inc./DBA ACTENVIRO	CAR000070540	B. Transporter 1 Phone
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID
		D. Transporter 2 Phone

9. Designated Facility Name and Site Address	10. US EPA ID Number	E. State Facility's ID
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL 1600 NM HWY 6 - 40 LANDFILL ROAD LOS LUNAS, NM 87031 505-917-6232	SWM #013230(SP)	F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	7.17	TON
b.				
c.				
d.				

RECEIVED JAN 15 2019

G. Additional Descriptions for Materials Listed Above
Project Number 184678 Document #: D221120
) 104423NM WEW-_____

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300
RBM250611

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
ALVIN Dorsey		12	06	18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Justin Gray		12	6	18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PCS-2 N: 34° 43.287 W 107° 02.514 Elev. 5485

Printed/Typed Name	Signature	Date Month	Day	Year
ARTHUR Gutierrez		12	7	18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221121

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone ( ): 505 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	7.12 → 14240165	TON
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
Project Number 184679 Document #: D221121
) 104423NM WEW-_____
VB16099

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Janelle Vestal | Signature | Date: Month 12 Day 5 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Luis Fuentes | Signature | Date: Month 12 Day 5 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PCS-2 N: 34° 43.287 W: 107° 02.514 Elev. 5485

Printed/Typed Name: Arthur Gutierrez | Signature | Date: Month 12 Day 7 Year 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD986682911

Manifest Document No. D221123

2. Page 1 of

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301
505 726 9721

4. Generator's Phone ( )

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CARR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 20 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	SM	12.24	TON
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
Project Number 184691 Document #: D221123
104423NM WEW-

H. Handling Codes for Wastes Listed Above
VB12030

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Janette Vestal — Signature — Date: Month 12 Day 4 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Justin Grey — Signature — Date: Month 12 Day 4 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PCS-2-N: 34°43.287 W: 107°02.514 Elev. 5485

Printed/Typed Name: Arthur Gutierrez — Signature — Date: Month 12 Day 10 Year 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221122

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	8.55 17100 165	TON
b.				
c.				
d.				

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G. Additional Descriptions for Materials Listed Above
Project Number 184680 Document #: D221122
) 104423NM WEW-_____
Rail Vac Box VB12034

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Janelle Vestal | Signature | Date: Month 12 Day 5 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Justin Guy | Signature | Date: Month 12 Day 5 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PESS2 - N:34 43.287 W:107 02.514 Elev: 5485

Printed/Typed Name: Doms Gilman | Signature | Date: Month 12 Day 5 Year 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

043D

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

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NMD000333211	Manifest Document No. D221124	2. Page 1 of 1
3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINING 92 GIANT CROSSING ROAD GALLUP, NM 87301			
4. Generator's Phone ( ) 505 726 9721			
5. Transporter 1 Company Name Advanced Chemical Transport Inc./DBA ACTENVIRO	6. US EPA ID Number CAR000070540	A. State Transporter's ID B. Transporter 1 Phone	
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID D. Transporter 2 Phone	
9. Designated Facility Name and Site Address WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL 1600 NM HWY 6 - 40 LANDFILL ROAD LOS LUNAS, NM 87031 505-917-6232	10. US EPA ID Number SWM #013230(SP)	E. State Facility's ID F. Facility's Phone	

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	13,960	~~TON~~ P
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above Project Number 184682 Document #: D221124

104423NM WEW- 1X25

Bin # VB12119

H. Handling Codes for Wastes Listed Above

RECEIVED JAN 15 2019

15. Special Handling Instructions and Additional Information

24 hour emergency contact: CHEMTREC 800-424-9300

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Month	Day	Year
Janelle Vestal	[signature]	12	4	18

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Justin Grey	[signature]	12	4	18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

PCS-2-N:34°43.287 W:107°02.514 Elev. 5485

Printed/Typed Name	Signature	Month	Day	Year
Arthur Gutierrez	[signature]	12	7	18

NON-HAZARDOUS WASTE MANIFEST

043A

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221131

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC) 043A	1	CM	26180 LBS	TON
b.				
c.				
d.				

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JAN 16 2019

G. Additional Descriptions for Materials Listed Above
Project Number 184687 Document #: D221131
104423NM WEW-_____

H. Handling Codes for Wastes Listed Above
VB12095

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300
#8893
Soil farm

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
Janelle Vestal		11 / 29 / 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
Justin Cruz		11 / 29 / 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)

FACILITY

19. Discrepancy Indication Space
PCS 2 - N34°43.287 W: 107°02.514 Elev: 5485

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)
Doris Gilman		11 / 29 / 18

NON-HAZARDOUS WASTE MANIFEST 043D

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD000333211

Manifest Document No. D221117

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT AMERICIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

	11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)		CM	39480p	TON
b.					
c.	) 104423NM WEW- Project Number 184674 Document # D221117				
d.					

GENERATOR

G. Additional Descriptions for Materials Listed Above
24 hour emergency contact: CHEMTREC 800-424-9300

H. Handling Codes for Wastes Listed Above

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JAN 17 2019

15. Special Handling Instructions and Additional Information
VB12209 #3893 Soilfarm

NON-HAZARDOUS WASTE

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
ALVIN DORSEY		11	28	18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Chris Lopez		11	29	18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space
PCS 2 - N: 34° 43.287 W: 107° 02.514 Elev: 5485

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year
Doris Gilman		11	30	18

NON-HAZARDOUS WASTE MANIFEST 043A

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221130

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone 505 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	19,840	TON
b. 043A				
c.				
d.				

RECEIVED
JAN 16 2019

G. Additional Descriptions for Materials Listed Above
Project Number 184686 Document #: D221130
) 104423NM WEW- 1x 25
Bin # 11128

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300
#8893

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Alvin Dorsey | Signature | Date: Month 11 Day 28 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Justin Grey | Signature | Date: Month 11 Day 28 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
N: 34° 43.287 W: 107° 02.514 Elev: 5485

Printed/Typed Name: Doris Gilman | Signature | Date: Month 11 Day 28 Year 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD000333211

Manifest Document No. D221118

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	5.56 → 11120 LBS	TON
b.				
c.				
d.				

RECEIVED
JAN 15 2019

G. Additional Descriptions for Materials Listed Above: Project Number 184676 Document #: D221118

1) 104423NM WEW-_____

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

VB12059 # 8893 Soil Gum

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: ALVIN Dorsey | Signature | Date: Month 11 Day 27 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Chris Lopez | Signature | Date: Month 11 Day 27 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

N: 34° 43.287 W: 107° 02.514 Elev: 5485 PCS 2

Printed/Typed Name: Doris Gilman | Signature | Date: Month 11 Day 28 Year 18

NON-HAZARDOUS WASTE

043D

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221129

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone: 505 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	3.16 6320 lbs	TON
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
Project Number 184685 Document #: D221129
1) 104423NM WEW-_____

VB120.50

H. Handling Codes for Wastes Listed Above

RECEIVED
JAN 15 2019

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

#8893

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
ALVIN Dorsey	Alvin Dorsey	11 27 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
R Martinez	R Martinez	11 27 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space
PCS2 - N:34° 43.287 W:107° 02.514 Elev:5485

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Don's Gilman	Don's Gilman	11 27 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST 043A (1)

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221125

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505 726 9721)

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	7.98 15960165	TON
b.				
c.				
d.				

RECEIVED JAN 16 2019

G. Additional Descriptions for Materials Listed Above
Project Number 184683 Document #: D221125
1) 104423NM WEW- 1X 254

H. Handling Codes for Wastes Listed Above
#2863

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300
#8893

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: ALVIN Dorsey — Signature — Date: Month 11 Day 26 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Justin Gray — Signature — Date: Month 11 Day 26 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PCS2 - N34° 43. 287 W: 107° 02. 514 Elev: 5485
Printed/Typed Name: DOHS Gilman — Signature — Date: Month 11 Day 26 Year 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

(2)

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221119

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone (505) 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	10.52 → 21040 lbs	TON
b.				
c.				
d.				

RECEIVED
JAN 16 2019

G. Additional Descriptions for Materials Listed Above
Project Number 184677 Document #: D221119
1) 104423NM WEW-_____

H. Handling Codes for Wastes Listed Above
VB11057

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300
#8893

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: ALVIN Dorsey | Signature | Date: Month 11 Day 26 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Chris Lopez | Signature | Date: Month 11 Day 26 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
PCS 2 - N34° 43.287 W: 107° 02.514 Elev: 5485

Printed/Typed Name: DON'S Gilman | Signature | Date: Month 11 Day 26 Year 18

NON-HAZARDOUS WASTE

043A

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NMD000333211

Manifest Document No.: D221116

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone: 505 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	23760 pnds	TON
b.				
c.				
d.				

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G. Additional Descriptions for Materials Listed Above
Project Number 184671 Document #: D221116
1) 104423NM WEW- VB 11004

Contract # 2893

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

#2 soil farm
Land farmed

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

GENERATOR

Printed/Typed Name: ALVIN DORSEY
Signature:
Date: Month 11 Day 21 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Rivera
Signature: David Rivera
Date: Month 11 Day 21 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
PCS 2 - N: 34° 43.287 W: 107° 02.514 Elev: 5485

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
Printed/Typed Name: Doris Gilman
Signature:
Date: Month 11 Day 21 Year 18

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

043A

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD000333211

Manifest Document No. D220968

2. Page 1 of 1

3. Generator's Name and Mailing Address
WESTERN REFINING SOUTHWEST GALLUP REFINING
92 GIANT CROSSING ROAD
GALLUP, NM 87301

4. Generator's Phone 505 726 9721

5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WASTE MANAGEMENT VALENCIA REGIONAL LANDFILL
1600 NM HWY 6 - 40 LANDFILL ROAD
LOS LUNAS, NM 87031
505-917-6232

10. US EPA ID Number: SWM #013230(SP)

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (PCS FROM RAIL PIPE HYDROVAC)	1	CM	9880 lbs	TON
b.				
c.				
d.				

RECEIVED
JAN 15 2019

G. Additional Descriptions for Materials Listed Above: Project Number 184492 Document #: D220968
1) 104423NM WEW-_____
Control # 8893
VB12131

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 hour emergency contact: CHEMTREC 800-424-9300

#8893
Landfarmed
Soil farm

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: ALVIN Dorsey | Signature | Date: Month 11 Day 20 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Rivera | Signature | Date: Month 11 Day 20 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
PCS-2 - N: 34° 43.287 W: 107° 02.514 Elev: 5485

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
Printed/Typed Name: Doris Gilman | Signature | Date: Month 11 Day 20 Year 18

NON-HAZARDOUS WASTE

Appendix E
Waste Analytical Results

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

September 12, 2018

Janelle Vestal

Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301
TEL:
FAX

RE: Rail Pipe Soil Cleanup OrderNo.: 1808D23

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/22/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 04, 2018.

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 Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils
Project: Rail Pipe Soil Cleanup
Collection Date: 8/20/2018 10:30:00 AM
Lab ID: 1808D23-001 **Matrix:** SLUDGE
Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **lrm**	
Diesel Range Organics (DRO)	25000	94	500		mg/Kg	50	8/27/2018 1:55:07 PM	39939
Motor Oil Range Organics (MRO)	4500	2500	2500		mg/Kg	50	8/27/2018 1:55:07 PM	39939
Surr: DNOP	0	0	50.6-138	S	%Rec	50	8/27/2018 1:55:07 PM	39939
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	1800	70	240		mg/Kg	50	8/23/2018 10:19:31 AM	39931
Surr: BFB	156	0	15-316		%Rec	50	8/23/2018 10:19:31 AM	39931
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.089	0.0064	0.032		mg/Kg	1	8/27/2018 4:04:33 PM	40008
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00050	0.020		mg/L	1	9/11/2018 4:43:30 PM	40278
EPA METHOD 6010B: SOIL METALS							Analyst: **JLF**	
Arsenic	0.88	0.87	2.4	J	mg/Kg	1	8/28/2018 1:29:19 PM	39998
Barium	300	0.042	0.19		mg/Kg	2	8/28/2018 12:59:21 PM	39998
Cadmium	ND	0.030	0.097		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Chromium	15	0.040	0.29		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Lead	26	0.24	0.24		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Selenium	ND	0.98	2.4		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Silver	ND	0.032	0.24		mg/Kg	1	8/28/2018 12:34:58 PM	39998
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Barium	2.5	0.0011	100	J	mg/L	1	9/12/2018 6:35:23 AM	40277
Chromium	ND	0.00070	5.0		mg/L	1	9/12/2018 6:35:23 AM	40277
Lead	0.014	0.011	5.0	J	mg/L	1	9/12/2018 6:35:23 AM	40277
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Acenaphthylene	ND	9.9	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Aniline	ND	9.5	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Anthracene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Azobenzene	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benz(a)anthracene	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(a)pyrene	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(b)fluoranthene	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(g,h,i)perylene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(k)fluoranthene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzoic acid	ND	14	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzyl alcohol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Bis(2-chloroethoxy)methane	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991

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
PQL	Practical Quanitative Limit	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 Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils
Project: Rail Pipe Soil Cleanup
Collection Date: 8/20/2018 10:30:00 AM
Lab ID: 1808D23-001 **Matrix:** SLUDGE
Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Bis(2-chloroisopropyl)ether	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Bis(2-ethylhexyl)phthalate	ND	27	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Bromophenyl phenyl ether	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Butyl benzyl phthalate	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Carbazole	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Chloro-3-methylphenol	ND	13	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Chloroaniline	ND	11	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Chloronaphthalene	ND	11	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Chlorophenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Chlorophenyl phenyl ether	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Chrysene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Di-n-butyl phthalate	ND	27	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Di-n-octyl phthalate	ND	11	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Dibenz(a,h)anthracene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Dibenzofuran	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,2-Dichlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,3-Dichlorobenzene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,4-Dichlorobenzene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
3,3´-Dichlorobenzidine	ND	9.7	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Diethyl phthalate	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Dimethyl phthalate	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dichlorophenol	ND	12	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dimethylphenol	ND	9.2	29	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4,6-Dinitro-2-methylphenol	ND	9.0	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dinitrophenol	ND	6.3	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dinitrotoluene	ND	10	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,6-Dinitrotoluene	ND	12	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Fluoranthene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Fluorene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachlorobutadiene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachlorocyclopentadiene	ND	9.7	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachloroethane	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Indeno(1,2,3-cd)pyrene	ND	14	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Isophorone	ND	13	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1-Methylnaphthalene	ND	14	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Methylnaphthalene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Methylphenol	ND	14	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991

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
PQL	Practical Quanitative Limit	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 Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils
Project: Rail Pipe Soil Cleanup
Collection Date: 8/20/2018 10:30:00 AM
Lab ID: 1808D23-001 **Matrix:** SLUDGE
Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
N-Nitrosodi-n-propylamine	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
N-Nitrosodiphenylamine	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Naphthalene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Nitroaniline	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
3-Nitroaniline	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Nitroaniline	ND	9.4	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Nitrobenzene	ND	11	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Nitrophenol	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Nitrophenol	ND	15	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Pentachlorophenol	ND	9.9	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Phenanthrene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Phenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Pyrene	14	11	20	JD	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Pyridine	ND	12	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,2,4-Trichlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4,5-Trichlorophenol	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4,6-Trichlorophenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Surr: 2-Fluorophenol	0		21.7-87.9	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: Phenol-d5	0		30.2-92.2	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: 2,4,6-Tribromophenol	0		47.1-103	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: Nitrobenzene-d5	0		23.9-102	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: 2-Fluorobiphenyl	0		32.6-101	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: 4-Terphenyl-d14	0		37.2-117	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	11	0.095	0.48		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Toluene	72	0.078	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Ethylbenzene	19	0.068	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Methyl tert-butyl ether (MTBE)	ND	0.15	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,4-Trimethylbenzene	23	0.084	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,3,5-Trimethylbenzene	7.9	0.061	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dichloroethane (EDC)	ND	0.10	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dibromoethane (EDB)	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Naphthalene	0.94	0.098	1.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
1-Methylnaphthalene	0.87	0.068	3.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Methylnaphthalene	1.1	0.078	3.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
Acetone	ND	1.0	14		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Bromobenzene	ND	0.071	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Bromodichloromethane	ND	0.13	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931

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
PQL	Practical Quanitative Limit	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 Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils
Project: Rail Pipe Soil Cleanup
Collection Date: 8/20/2018 10:30:00 AM
Lab ID: 1808D23-001 **Matrix:** SLUDGE
Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.24	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Bromomethane	ND	0.17	2.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Butanone	ND	0.57	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Carbon disulfide	ND	0.11	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Carbon tetrachloride	ND	0.095	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chlorobenzene	ND	0.057	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chloroethane	ND	0.32	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chloroform	ND	0.058	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chloromethane	ND	0.20	2.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Chlorotoluene	ND	0.075	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
4-Chlorotoluene	ND	0.087	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
cis-1,2-DCE	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
cis-1,3-Dichloropropene	ND	0.073	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dibromo-3-chloropropane	ND	0.13	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Dibromochloromethane	ND	0.081	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Dibromomethane	ND	0.047	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dichlorobenzene	ND	0.049	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,3-Dichlorobenzene	ND	0.085	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,4-Dichlorobenzene	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Dichlorodifluoromethane	ND	0.40	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1-Dichloroethane	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1-Dichloroethene	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dichloropropane	ND	0.060	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,3-Dichloropropane	ND	0.24	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2,2-Dichloropropane	ND	0.11	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1-Dichloropropene	ND	0.11	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Hexachlorobutadiene	ND	0.24	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Hexanone	ND	0.19	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Isopropylbenzene	4.3	0.065	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
4-Isopropyltoluene	1.3	0.074	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
4-Methyl-2-pentanone	ND	0.21	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Methylene chloride	ND	0.39	2.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
n-Butylbenzene	1.5	0.086	2.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
n-Propylbenzene	6.1	0.060	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
sec-Butylbenzene	1.6	0.099	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Styrene	ND	0.17	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
tert-Butylbenzene	ND	0.078	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,1,2-Tetrachloroethane	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,2,2-Tetrachloroethane	ND	0.28	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931

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
PQL	Practical Quanitative Limit	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 Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils
Project: Rail Pipe Soil Cleanup
Collection Date: 8/20/2018 10:30:00 AM
Lab ID: 1808D23-001 **Matrix:** SLUDGE
Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.077	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
trans-1,2-DCE	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
trans-1,3-Dichloropropene	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,3-Trichlorobenzene	ND	0.088	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,4-Trichlorobenzene	ND	0.098	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,1-Trichloroethane	ND	0.13	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,2-Trichloroethane	ND	0.10	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Trichloroethene (TCE)	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Trichlorofluoromethane	ND	0.14	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,3-Trichloropropane	ND	0.48	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Vinyl chloride	ND	0.080	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Xylenes, Total	99	0.30	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Surr: Dibromofluoromethane	104		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
Surr: 1,2-Dichloroethane-d4	112		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
Surr: Toluene-d8	103		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
Surr: 4-Bromofluorobenzene	110		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
VOLATILES BY 8260B/1311							Analyst: **RAA**	
Benzene	0.45	0.10	0.50	J	mg/L	1	8/28/2018 1:16:00 PM	39997
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	8/28/2018 1:16:00 PM	39997
Surr: 4-Bromofluorobenzene	101	0	57.3-148		%Rec	1	8/28/2018 1:16:00 PM	39997
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	8/28/2018 1:16:00 PM	39997
Surr: Toluene-d8	97.0	0	70-130		%Rec	1	8/28/2018 1:16:00 PM	39997

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **LCS-39939**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **39939**	RunNo: **53657**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1770197** 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	91.0	70	130			
Surr: DNOP	4.9		5.000		98.5	50.6	138			

Sample ID **MB-39939**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **39939**	RunNo: **53657**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1770198** 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	9.8		10.00		97.5	50.6	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **MB-39931**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **39931**	RunNo: **53673**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1769982** 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	880		1000		87.8	15	316			

Sample ID **LCS-39931**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **39931**	RunNo: **53673**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1769983** 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	93.4	75.9	131			
Surr: BFB	1000		1000		101	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **mb-39931**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **39931**	RunNo: **53662**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1770133** 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	0.35	0.50								J
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
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **mb-39931**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **39931**	RunNo: **53662**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1770133** 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	0.48		0.5000		95.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.0	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID **lcs-39931**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **39931**	RunNo: **53662**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1770134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.8	70	130			
Toluene	1.1	0.050	1.000	0	107	70	130			
Chlorobenzene	1.1	0.050	1.000	0	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
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**lcs-39931**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: Volatiles**
Client ID:	**LCSS**	Batch ID:	**39931**	RunNo:	**53662**
Prep Date:	**8/22/2018**	Analysis Date:	**8/23/2018**	SeqNo:	**1770134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.92	0.050	1.000	0	92.2	70	130			
Trichloroethene (TCE)	0.97	0.050	1.000	0	96.5	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		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
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**lcs-39997**	SampType:	**LCS**		TestCode:	**Volatiles by 8260B/1311**				
Client ID:	**LCSS**	Batch ID:	**39997**		RunNo:	**53749**				
Prep Date:	**8/27/2018**	Analysis Date:	**8/28/2018**		SeqNo:	**1773361**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.44	0.10	0.4000	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		111	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		102	57.3	148			
Surr: Dibromofluoromethane	0.22		0.2000		112	70	130			
Surr: Toluene-d8	0.20		0.2000		97.7	70	130			

Sample ID	**mb-39997**	SampType:	**MBLK**		TestCode:	**Volatiles by 8260B/1311**				
Client ID:	**PBS**	Batch ID:	**39997**		RunNo:	**53749**				
Prep Date:	**8/27/2018**	Analysis Date:	**8/28/2018**		SeqNo:	**1773362**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		109	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		100	57.3	148			
Surr: Dibromofluoromethane	0.22		0.2000		111	70	130			
Surr: Toluene-d8	0.19		0.2000		96.4	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
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **lcs-39991**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **39991**	RunNo: **53825**
Prep Date: **8/27/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776440** 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	82.2	42	110			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.1	42.3	117			
2-Chlorophenol	2.1	0.20	3.330	0	62.7	27.6	117			
1,4-Dichlorobenzene	0.94	0.20	1.670	0	56.2	28.8	105			
2,4-Dinitrotoluene	1.5	0.50	1.670	0	88.1	42	98.7			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.2	41.8	112			
4-Nitrophenol	3.4	0.25	3.330	0	102	54	113			
Pentachlorophenol	2.8	0.40	3.330	0	84.5	41.5	101			
Phenol	2.2	0.20	3.330	0	66.8	32.2	115			
Pyrene	1.6	0.20	1.670	0	93.5	48.5	121			
1,2,4-Trichlorobenzene	1.1	0.20	1.670	0	65.6	39.9	112			
Surr: 2-Fluorophenol	1.9		3.330		58.5	21.7	87.9			
Surr: Phenol-d5	2.3		3.330		70.1	30.2	92.2			
Surr: 2,4,6-Tribromophenol	3.1		3.330		93.8	47.1	103			
Surr: Nitrobenzene-d5	1.1		1.670		63.7	23.9	102			
Surr: 2-Fluorobiphenyl	1.3		1.670		76.2	32.6	101			
Surr: 4-Terphenyl-d14	1.8		1.670		108	37.2	117			

Sample ID **mb-39991**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **39991**	RunNo: **53825**
Prep Date: **8/27/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776441** 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	0.31	0.50								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
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **mb-39991**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **39991**	RunNo: **53825**
Prep Date: **8/27/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776441** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
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								

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
PQL	Practical Quanitative Limit	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#: **1808D23**
12-Sep-18

Client: Western Refining Southwest, Gallup
Project: Rail Pipe Soil Cleanup

Sample ID **mb-39991**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **39991**	RunNo: **53825**	
Prep Date: **8/27/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776441**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		55.8	21.7	87.9			
Surr: Phenol-d5	2.0		3.330		60.9	30.2	92.2			
Surr: 2,4,6-Tribromophenol	3.0		3.330		89.1	47.1	103			
Surr: Nitrobenzene-d5	1.0		1.670		61.9	23.9	102			
Surr: 2-Fluorobiphenyl	1.1		1.670		66.9	32.6	101			
Surr: 4-Terphenyl-d14	1.6		1.670		98.5	37.2	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
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-40008**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**40008**	RunNo:	**53728**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**	SeqNo:	**1772448**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-40008**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**40008**	RunNo:	**53728**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**	SeqNo:	**1772449**	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	104	80	120			

Sample ID	**LLLLCS-40008**	SampType:	**LCSLL**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**BatchQC**	Batch ID:	**40008**	RunNo:	**53728**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**	SeqNo:	**1772450**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0076	0.033	0.006660	0	114	70	130			J

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
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-40278**	SampType:	**MBLK**	TestCode:	**MERCURY, TCLP**					
Client ID:	**PBW**	Batch ID:	**40278**	RunNo:	**54072**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/11/2018**	SeqNo:	**1786579**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	**LCS-40278**	SampType:	**LCS**	TestCode:	**MERCURY, TCLP**					
Client ID:	**LCSW**	Batch ID:	**40278**	RunNo:	**54072**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/11/2018**	SeqNo:	**1786580**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.020	0.005000	0	103	80	120			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
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-39998**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**39998**	RunNo:	**53746**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/28/2018**	SeqNo:	**1773309**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

Sample ID	**LCS-39998**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID:	**39998**	RunNo:	**53746**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/28/2018**	SeqNo:	**1773311**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	24	0.10	25.00	0	94.1	80	120			
Cadmium	23	0.10	25.00	0	92.7	80	120			
Chromium	23	0.30	25.00	0	92.9	80	120			
Lead	22	0.25	25.00	0	87.9	80	120			
Selenium	21	2.5	25.00	0	82.0	80	120			
Silver	4.8	0.25	5.000	0	96.7	80	120			

Sample ID	**MB-39998**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**39998**	RunNo:	**53746**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/28/2018**	SeqNo:	**1773353**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								

Sample ID	**LCS-39998**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID:	**39998**	RunNo:	**53746**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/28/2018**	SeqNo:	**1773355**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	22	2.5	25.00	0	89.1	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
PQL	Practical Quanitative Limit	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#: **1808D23**

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-40277**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**PBW**	Batch ID:	**40277**	RunNo:	**54079**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/12/2018**	SeqNo:	**1787012**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	100								
Chromium	0.00071	5.0								J

Sample ID	**MB-40277**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**PBW**	Batch ID:	**40277**	RunNo:	**54079**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/12/2018**	SeqNo:	**1787014**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID	**LCS-40277**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**LCSW**	Batch ID:	**40277**	RunNo:	**54079**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/12/2018**	SeqNo:	**1787015**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	100	0.5000	0	101	80	120			J
Chromium	0.49	5.0	0.5000	0	98.7	80	120			J
Lead	0.47	5.0	0.5000	0	94.9	80	120			J

Sample ID	**1808D23-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**Rail Pipe Excavated**	Batch ID:	**40277**	RunNo:	**54079**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/12/2018**	SeqNo:	**1787017**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.9	100	0.5000	2.494	83.6	75	125			J
Chromium	0.48	5.0	0.5000	0	96.9	75	125			J
Lead	0.50	5.0	0.5000	0.01432	96.2	75	125			J

Sample ID	**1808D23-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**Rail Pipe Excavated**	Batch ID:	**40277**	RunNo:	**54079**					
Prep Date:	**9/11/2018**	Analysis Date:	**9/12/2018**	SeqNo:	**1787018**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.9	100	0.5000	2.494	84.6	75	125	0.172	20	J
Chromium	0.49	5.0	0.5000	0	97.7	75	125	0.806	20	J
Lead	0.50	5.0	0.5000	0.01432	97.0	75	125	0.734	20	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
PQL	Practical Quanitative Limit	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: 1808D23 RcptNo: 1

Received By: Jazzmine Burkhead 8/22/2018 9:05:00 AM

Completed By: Ashley Gallegos 8/22/2018 10:27:29 AM

Reviewed By: 08/22/18 Labeled by: JAB 08/22/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

08/22/18 JAB

Special Handling (if applicable)

15. 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: ____

16. Additional remarks:

17. **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/Andeavor	Turn-Around Time: ☐ Standard ☒ Rush
Gallup Refinery	Project Name: Rail Pipe Soil Cleanup
Mailing Address: 92 GIANT CROSSING ROAD	
Gallup NM 87301	Project #
Phone #: 505 722 3721	
email or Fax#: 505 863 0930	Project Manager: Janelle Vestal
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)	Alvin Dorsey
☐ Other ☐ EDD (Type)	Sampler:
	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. 1808 D23	Reactivity	RCRA 8 METALS	8310 PAH	8270 - Semi-VOCs	8260B - VOCs	R8015 D (DRO/GRO/MRO)	Benzene - TCLP
							Analysis Request						
8/20/2018	10:30	Solid	Rail Pipe Excavated Soils	2 - 9oz	None	-001		X		X	X	X	X

Date: 08/21/2018	10:00	Relinquished by: Janelle Vestal	Received by:	Date 08/22/18	Time 09:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Add TCLP Hg, Ba, Cr, Pb per Janelle 9/7

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

September 28, 2018

Janelle Vestal

Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301
TEL:
FAX

RE: Rail Pipe Soil Cleanup OrderNo.: 1809C86

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/21/2018 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 qualifiers 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1809C86**
Date Reported: **9/28/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils 2
Project: Rail Pipe Soil Cleanup
Collection Date: 9/19/2018 9:30:00 AM
Lab ID: 1809C86-001 **Matrix:** SOIL **Received Date:** 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **lrm**	
Diesel Range Organics (DRO)	1600	19	97	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Motor Oil Range Organics (MRO)	ND	490	490	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Surr: DNOP	0	0	50.6-138	SD	%Rec	10	9/26/2018 2:21:57 PM	40586
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.047	0.0065	0.032		mg/Kg	1	9/27/2018 4:15:27 PM	40631
EPA METHOD 6010B: SOIL METALS							Analyst: **pmf**	
Arsenic	ND	4.5	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Barium	330	0.11	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Cadmium	ND	0.16	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Chromium	15	0.20	1.5		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Lead	16	1.2	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Selenium	ND	5.0	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Silver	ND	0.16	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.045	0.0098	0.050	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Toluene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Ethylbenzene	0.32	0.0070	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methyl tert-butyl ether (MTBE)	0.12	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trimethylbenzene	1.2	0.0087	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3,5-Trimethylbenzene	0.40	0.0063	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloroethane (EDC)	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromoethane (EDB)	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Naphthalene	0.87	0.010	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1-Methylnaphthalene	2.1	0.0071	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Methylnaphthalene	2.3	0.0081	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Acetone	ND	0.11	1.5	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromobenzene	ND	0.0073	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromodichloromethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromoform	ND	0.024	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromomethane	ND	0.017	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Butanone	ND	0.059	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Carbon disulfide	ND	0.012	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Carbon tetrachloride	ND	0.0099	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chlorobenzene	ND	0.0059	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloroethane	ND	0.033	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloroform	ND	0.0060	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloromethane	ND	0.021	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Chlorotoluene	ND	0.0078	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

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
PQL	Practical Quanitative Limit	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 Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils 2
Project: Rail Pipe Soil Cleanup
Collection Date: 9/19/2018 9:30:00 AM
Lab ID: 1809C86-001 **Matrix:** SOIL **Received Date:** 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
4-Chlorotoluene	ND	0.0090	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
cis-1,2-DCE	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
cis-1,3-Dichloropropene	ND	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromo-3-chloropropane	ND	0.014	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dibromochloromethane	ND	0.0084	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dibromomethane	ND	0.0049	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichlorobenzene	ND	0.0051	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3-Dichlorobenzene	ND	0.0088	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,4-Dichlorobenzene	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dichlorodifluoromethane	ND	0.041	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloroethane	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloroethene	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloropropane	ND	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3-Dichloropropane	ND	0.025	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2,2-Dichloropropane	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloropropene	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Hexachlorobutadiene	ND	0.025	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Hexanone	ND	0.019	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Isopropylbenzene	0.055	0.0067	0.10	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
4-Isopropyltoluene	0.20	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
4-Methyl-2-pentanone	ND	0.021	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methylene chloride	ND	0.040	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
n-Butylbenzene	0.30	0.0089	0.30	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
n-Propylbenzene	0.17	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
sec-Butylbenzene	0.16	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Styrene	ND	0.017	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
tert-Butylbenzene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,1,2-Tetrachloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,2,2-Tetrachloroethane	ND	0.029	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Tetrachloroethene (PCE)	ND	0.0080	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
trans-1,2-DCE	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
trans-1,3-Dichloropropene	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,3-Trichlorobenzene	ND	0.0091	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trichlorobenzene	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,1-Trichloroethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,2-Trichloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Trichloroethene (TCE)	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Trichlorofluoromethane	ND	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,3-Trichloropropane	ND	0.050	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

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Qualifiers:

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PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Rail Pipe Excavated Soils 2
Project: Rail Pipe Soil Cleanup
Collection Date: 9/19/2018 9:30:00 AM
Lab ID: 1809C86-001 **Matrix:** SOIL **Received Date:** 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Vinyl chloride	ND	0.0083	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Xylenes, Total	0.53	0.031	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Surr: Dibromofluoromethane	89.0		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: 1,2-Dichloroethane-d4	94.0		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: Toluene-d8	86.6		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: 4-Bromofluorobenzene	120		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
EPA METHOD 8260B: TCLP COMPOUNDS							Analyst: **DJF**	
Benzene	0.055	0.049	0.50	J	ppm	10	9/25/2018 12:59:39 PM	40538
Surr: 1,2-Dichloroethane-d4	88.2		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Dibromofluoromethane	87.2		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Toluene-d8	91.5		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	94	0.94	5.0		mg/Kg	1	9/25/2018 2:51:21 PM	40538
Surr: BFB	138	0	70-130	S	%Rec	1	9/25/2018 2:51:21 PM	40538

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-40586**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**40586**		RunNo:	**54424**				
Prep Date:	**9/26/2018**	Analysis Date:	**9/26/2018**		SeqNo:	**1803489**	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		110	50.6	138			

Sample ID	**LCS-40586**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**40586**		RunNo:	**54424**				
Prep Date:	**9/26/2018**	Analysis Date:	**9/26/2018**		SeqNo:	**1803490**	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	70	130			
Surr: DNOP	5.7		5.000		113	50.6	138			

Sample ID	**LCS-40568**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**40568**		RunNo:	**54424**				
Prep Date:	**9/25/2018**	Analysis Date:	**9/26/2018**		SeqNo:	**1805098**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		101	50.6	138			

Sample ID	**MB-40568**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**40568**		RunNo:	**54424**				
Prep Date:	**9/25/2018**	Analysis Date:	**9/26/2018**		SeqNo:	**1805099**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		106	50.6	138			

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	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#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **mb-40538**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801939** 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	0.031	0.15								J
2-Butanone	0.081	0.50								J
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:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **mb-40538**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801939** 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	0.022	0.50								J
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	0.47		0.5000		94.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			

Sample ID **lcs-40538**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801940** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.4	70	130			
Toluene	0.90	0.050	1.000	0	89.8	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	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
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **lcs-40538**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801940** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			

Sample ID **1809c86-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **Rail Pipe Excavated**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801942** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0.04497	99.6	51.9	158			
Toluene	0.98	0.10	1.000	0	98.1	64.6	132			
Chlorobenzene	1.1	0.10	1.000	0	107	62.8	136			
1,1-Dichloroethene	1.0	0.10	1.000	0	101	42.4	170			
Trichloroethene (TCE)	0.91	0.10	1.000	0	91.5	70	130			
Surr: Dibromofluoromethane	0.89		1.000		88.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.95		1.000		95.2	70	130			
Surr: Toluene-d8	0.92		1.000		91.6	70	130			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	70	130			

Sample ID **1809c86-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **Rail Pipe Excavated**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801943** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9960	0.04497	110	51.9	158	8.81	20	
Toluene	1.0	0.10	0.9960	0	100	64.6	132	1.77	20	
Chlorobenzene	1.1	0.10	0.9960	0	110	62.8	136	2.25	20	
1,1-Dichloroethene	1.1	0.10	0.9960	0	106	42.4	170	4.41	20	
Trichloroethene (TCE)	0.98	0.10	0.9960	0	98.8	70	130	7.29	20	
Surr: Dibromofluoromethane	0.92		0.9960		92.6	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.97		0.9960		97.0	70	130	0	0	
Surr: Toluene-d8	0.88		0.9960		88.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.3		0.9960		130	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
PQL	Practical Quanitative Limit	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#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID **mb-40538**	SampType: **MBLK**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **PBS**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801953** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	0.081	20								J
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			

Sample ID **lcs-40538**	SampType: **LCS**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **LCSS**	Batch ID: **40538**	RunNo: **54394**
Prep Date: **9/24/2018**	Analysis Date: **9/25/2018**	SeqNo: **1801954** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.050	1.000	0	93.4	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	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
PQL	Practical Quanitative Limit	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#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-40631**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**40631**	RunNo:	**54464**					
Prep Date:	**9/27/2018**	Analysis Date:	**9/27/2018**	SeqNo:	**1805335**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-40631**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**40631**	RunNo:	**54464**					
Prep Date:	**9/27/2018**	Analysis Date:	**9/27/2018**	SeqNo:	**1805336**	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	**LLLCS-40631**	SampType:	**LCSLL**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**BatchQC**	Batch ID:	**40631**	RunNo:	**54464**					
Prep Date:	**9/27/2018**	Analysis Date:	**9/27/2018**	SeqNo:	**1805337**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0073	0.033	0.006660	0	110	70	130			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
PQL	Practical Quanitative Limit	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#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-40535**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**40535**	RunNo:	**54358**					
Prep Date:	**9/24/2018**	Analysis Date:	**9/24/2018**	SeqNo:	**1800807**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	0.052	0.30								J
Lead	ND	0.25								
Selenium	1.1	2.5								J
Silver	ND	0.25								

Sample ID	**LCS-40535**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID:	**40535**	RunNo:	**54358**					
Prep Date:	**9/24/2018**	Analysis Date:	**9/24/2018**	SeqNo:	**1800811**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.6	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	98.8	80	120			
Chromium	25	0.30	25.00	0	98.8	80	120			
Lead	25	0.25	25.00	0	98.6	80	120			
Selenium	23	2.5	25.00	0	93.6	80	120			
Silver	5.3	0.25	5.000	0	106	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
PQL	Practical Quanitative Limit	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#: **1809C86**

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	**lcs-40538**	SampType:	**LCS**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**40538**		RunNo:	**54391**				
Prep Date:	**9/24/2018**	Analysis Date:	**9/25/2018**		SeqNo:	**1802094**	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	70	130			
Surr: BFB	460		500.0		91.6	70	130			

Sample ID	**mb-40538**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**40538**		RunNo:	**54391**				
Prep Date:	**9/24/2018**	Analysis Date:	**9/25/2018**		SeqNo:	**1802095**	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	**lcs-40548**	SampType:	**LCS**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**40548**		RunNo:	**54391**				
Prep Date:	**9/24/2018**	Analysis Date:	**9/25/2018**		SeqNo:	**1802097**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.6	70	130			

Sample ID	**mb-40548**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**40548**		RunNo:	**54391**				
Prep Date:	**9/24/2018**	Analysis Date:	**9/25/2018**		SeqNo:	**1802098**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	490		500.0		97.0	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
PQL	Practical Quanitative Limit	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: **1809C86** RcptNo: **1**

Received By: **Jazzmine Burkhead** **9/21/2018 8:55:00 AM**

Completed By: **Ashley Gallegos** **9/21/2018 10:45:18 AM**

Reviewed By: 09/21/18 labeled by: JAB 09/21/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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: _____ 09/21/18 AB

Special Handling (if applicable)

15. 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:			

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			

Chain-of-Custody Record

Client: Western/Andeavor

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3721

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush _____

Project Name:

Rail Pipe Soil Cleanup

Project #:

Project Manager:

Janelle Vestal

Alvin Dorsey

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1

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. 1809 C86	Reactivity	RCRA 8 METALS	8310 PAH	8270 - Semi-VOCs	8260B - VOCs	R8015 D (DRO/GRO/MRO)	Benzene - TCLP
9/19/2018	9:30	Solid	Rail Pipe Excavated Soils #2	2 - 9oz	None	-001		X			X	X	X

Date:	Time:	Relinquished by:	Received by:	Date	Time
~~9/21/2018~~ 9/20/18	~~10:00~~ 8:00	Janelle Vestal	Jaymi Burkhead	09/21/18	08:55
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

Courier

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 09, 2018

Janelle Vestal

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Rail Pipe Soil Cleanup OrderNo.: 1811207

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 15 sample(s) on 11/5/2018 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 qualifiers 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: RBM 250611
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:00:00 PM
Lab ID: 1811207-001 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 10:09:06 AM
Surr: 1,2-Dichloroethane-d4	94.1	70-130		%Rec	5	11/7/2018 10:09:06 AM
Surr: 4-Bromofluorobenzene	58.5	70-130	S	%Rec	5	11/7/2018 10:09:06 AM
Surr: Dibromofluoromethane	96.6	70-130		%Rec	5	11/7/2018 10:09:06 AM
Surr: Toluene-d8	101	70-130		%Rec	5	11/7/2018 10:09:06 AM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: EVB 12194
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:05:00 PM
Lab ID: 1811207-002 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 10:37:40 AM
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%Rec	5	11/7/2018 10:37:40 AM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	5	11/7/2018 10:37:40 AM
Surr: Dibromofluoromethane	98.3	70-130		%Rec	5	11/7/2018 10:37:40 AM
Surr: Toluene-d8	101	70-130		%Rec	5	11/7/2018 10:37:40 AM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 16099
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:10:00 PM
Lab ID: 1811207-003 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 11:06:23 AM
Surr: 1,2-Dichloroethane-d4	98.9	70-130		%Rec	5	11/7/2018 11:06:23 AM
Surr: 4-Bromofluorobenzene	88.9	70-130		%Rec	5	11/7/2018 11:06:23 AM
Surr: Dibromofluoromethane	96.7	70-130		%Rec	5	11/7/2018 11:06:23 AM
Surr: Toluene-d8	101	70-130		%Rec	5	11/7/2018 11:06:23 AM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12034
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:15:00 PM
Lab ID: 1811207-004 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 11:35:11 AM
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%Rec	5	11/7/2018 11:35:11 AM
Surr: 4-Bromofluorobenzene	69.4	70-130	S	%Rec	5	11/7/2018 11:35:11 AM
Surr: Dibromofluoromethane	96.9	70-130		%Rec	5	11/7/2018 11:35:11 AM
Surr: Toluene-d8	101	70-130		%Rec	5	11/7/2018 11:35:11 AM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12030
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:20:00 PM
Lab ID: 1811207-005 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 12:03:40 PM
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%Rec	5	11/7/2018 12:03:40 PM
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	5	11/7/2018 12:03:40 PM
Surr: Dibromofluoromethane	93.8	70-130		%Rec	5	11/7/2018 12:03:40 PM
Surr: Toluene-d8	105	70-130		%Rec	5	11/7/2018 12:03:40 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12119
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:25:00 PM
Lab ID: 1811207-006 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 12:32:22 PM
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%Rec	5	11/7/2018 12:32:22 PM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	5	11/7/2018 12:32:22 PM
Surr: Dibromofluoromethane	97.6	70-130		%Rec	5	11/7/2018 12:32:22 PM
Surr: Toluene-d8	103	70-130		%Rec	5	11/7/2018 12:32:22 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12095
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:35:00 PM
Lab ID: 1811207-007 **Matrix:** SOIL **Received Date:** 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 1:01:00 PM
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%Rec	5	11/7/2018 1:01:00 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	5	11/7/2018 1:01:00 PM
Surr: Dibromofluoromethane	96.7	70-130		%Rec	5	11/7/2018 1:01:00 PM
Surr: Toluene-d8	100	70-130		%Rec	5	11/7/2018 1:01:00 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 11004
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:45:00 PM
Lab ID: 1811207-008 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 1:29:31 PM
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%Rec	5	11/7/2018 1:29:31 PM
Surr: 4-Bromofluorobenzene	188000	70-130	S	%Rec	5	11/7/2018 1:29:31 PM
Surr: Dibromofluoromethane	96.9	70-130		%Rec	5	11/7/2018 1:29:31 PM
Surr: Toluene-d8	104	70-130		%Rec	5	11/7/2018 1:29:31 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12209
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:50:00 PM
Lab ID: 1811207-009 **Matrix:** SOIL **Received Date:** 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 11:07:57 AM
Surr: 1,2-Dichloroethane-d4	95.0	70-130		%Rec	5	11/7/2018 11:07:57 AM
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	5	11/7/2018 11:07:57 AM
Surr: Dibromofluoromethane	93.0	70-130		%Rec	5	11/7/2018 11:07:57 AM
Surr: Toluene-d8	92.7	70-130		%Rec	5	11/7/2018 11:07:57 AM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 11128
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 12:55:00 PM
Lab ID: 1811207-010 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 11:37:19 AM
Surr: 1,2-Dichloroethane-d4	98.7	70-130		%Rec	5	11/7/2018 11:37:19 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	5	11/7/2018 11:37:19 AM
Surr: Dibromofluoromethane	95.1	70-130		%Rec	5	11/7/2018 11:37:19 AM
Surr: Toluene-d8	90.7	70-130		%Rec	5	11/7/2018 11:37:19 AM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12059
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 1:05:00 PM
Lab ID: 1811207-011 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 12:06:55 PM
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%Rec	5	11/7/2018 12:06:55 PM
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	5	11/7/2018 12:06:55 PM
Surr: Dibromofluoromethane	94.7	70-130		%Rec	5	11/7/2018 12:06:55 PM
Surr: Toluene-d8	88.8	70-130		%Rec	5	11/7/2018 12:06:55 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12050
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 1:15:00 PM
Lab ID: 1811207-012 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 12:36:23 PM
Surr: 1,2-Dichloroethane-d4	98.2	70-130		%Rec	5	11/7/2018 12:36:23 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	5	11/7/2018 12:36:23 PM
Surr: Dibromofluoromethane	96.2	70-130		%Rec	5	11/7/2018 12:36:23 PM
Surr: Toluene-d8	90.2	70-130		%Rec	5	11/7/2018 12:36:23 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: LH 2863
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 1:25:00 PM
Lab ID: 1811207-013 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 1:05:37 PM
Surr: 1,2-Dichloroethane-d4	99.0	70-130		%Rec	5	11/7/2018 1:05:37 PM
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	5	11/7/2018 1:05:37 PM
Surr: Dibromofluoromethane	94.6	70-130		%Rec	5	11/7/2018 1:05:37 PM
Surr: Toluene-d8	89.4	70-130		%Rec	5	11/7/2018 1:05:37 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 12131
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 1:30:00 PM
Lab ID: 1811207-014 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 1:34:55 PM
Surr: 1,2-Dichloroethane-d4	99.4	70-130		%Rec	5	11/7/2018 1:34:55 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	5	11/7/2018 1:34:55 PM
Surr: Dibromofluoromethane	97.2	70-130		%Rec	5	11/7/2018 1:34:55 PM
Surr: Toluene-d8	90.7	70-130		%Rec	5	11/7/2018 1:34:55 PM

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: VB 11057
Project: Rail Pipe Soil Cleanup
Collection Date: 11/5/2018 1:35:00 PM
Lab ID: 1811207-015 **Matrix:** SOIL
Received Date: 11/5/2018 5:04:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**
Benzene	ND	0.12		mg/Kg	5	11/7/2018 2:04:50 PM
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%Rec	5	11/7/2018 2:04:50 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	5	11/7/2018 2:04:50 PM
Surr: Dibromofluoromethane	94.4	70-130		%Rec	5	11/7/2018 2:04:50 PM
Surr: Toluene-d8	92.3	70-130		%Rec	5	11/7/2018 2:04:50 PM

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
PQL	Practical Quanitative Limit	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#: **1811207**

09-Nov-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID **lcs-41386**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **41386**	RunNo: **55466**
Prep Date: **11/6/2018**	Analysis Date: **11/7/2018**	SeqNo: **1846669** 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	99.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.7	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.3	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			

Sample ID **mb-41386**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **41386**	RunNo: **55466**
Prep Date: **11/6/2018**	Analysis Date: **11/7/2018**	SeqNo: **1847971** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.8	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.8	70	130			
Surr: Toluene-d8	0.50		0.5000		99.5	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
PQL	Practical Quanitative Limit	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: **MARATHON GALLUP** Work Order Number: **1811207** RcptNo: 1

Received By: **Erin Melendrez** **11/5/2018 5:04:00 PM**

Completed By: **Isaiah Ortiz** **11/6/2018 8:33:26 AM**

Reviewed By: VV2 11/6/18

LB DAD 11/06/18

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. 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: DAD 11/06/18

Special Handling (if applicable)

15. 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:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	8.2	Good	Not Present			

Chain-of-Custody Record

Client: Marathon Petroleum

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3721

email or Fax#: 505 863 0930

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush ASAP

Project Name: Rail Pipe Soil Cleanup

Project #:

Project Manager: Janelle Vestal

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.2

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 1801207	RCI	RCRA 8 METALS - TCLP	8310 PAH	8270 - Semi-VOCs	8260B - VOCs	R8015 D (DRO/GRO/MRO)	Benzene - TCLP	Total Benzene	Air Bubbles (Y or N)
11/5/2018	12:00	Solid	RBM 250511	½ - 9oz	None	-001								X	
11/5/2018	~~12:00~~ 12:05	Solid	EVB12194	½ - 9oz	None	-002								X	
11/5/2018	~~12:00~~ 12:10	Solid	VB 16099	½ - 9oz	None	-003								X	
11/5/2018	~~12:00~~ 12:15	Solid	VB12034	½ - 9oz	None	-004								X	
11/5/2018	~~12:00~~ 12:20	Solid	VB 12030	½ - 9oz	None	-005								X	
11/5/2018	~~12:00~~ 12:25	Solid	VB12119	½ - 9oz	None	-006								X	
11/5/2018	~~12:00~~ 12:30	Solid	VB12095	½ - 9oz	None	-007								X	
11/5/2018	~~12:00~~ 12:45	Solid	VB11004	½ - 9oz	None	-008								X	
11/5/2018	~~12:00~~ 12:50	Solid	VB12209	½ - 9oz	None	-009								X	
11/5/2018	~~12:00~~ 12:55	Solid	VB11128	½ - 9oz	None	-010								X	
11/5/2018	~~12:00~~ 13:05	Solid	VB12059	½ - 9oz	None	-011								X	
11/5/2018	~~12:00~~ 13:15	Solid	VB12050	½ - 9oz	None	-012								X	
11/5/2018	~~12:00~~ 13:25	Solid	LH2863	½ - 9oz	None	-013								X	
11/5/2018	~~12:00~~ 13:30	Solid	VB12131	½ - 9oz	None	-014								X	
11/5/2018	~~12:00~~ 13:35	Solid	VB11057	½ - 9oz	None	-015								X	
	DAD	11/06/18													

Date:	Time:	Relinquished by:	Received by:	Date Time	Remarks:
11/5/18	3:00pm	Janelle Vestal		11/05/18 305	TCLP Benzene on any with Total Benzene > 10 mg/kg
11/5/18	1704			11/05/18 1704	

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

December 07, 2018

Janelle Vestal
Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX

RE: Rail Pipe Soil Cleanup OrderNo.: 1811D83

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/28/2018 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 qualifiers 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Rail Pipe Excavated Soils #3
Project: Rail Pipe Soil Cleanup
Collection Date: 11/28/2018 8:40:00 AM
Lab ID: 1811D83-001 **Matrix:** SOIL **Received Date:** 11/28/2018 3:56:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **lrm**	
Diesel Range Organics (DRO)	9200	19	96		mg/Kg	10	12/4/2018 12:08:02 PM	41858
Motor Oil Range Organics (MRO)	2400	480	480		mg/Kg	10	12/4/2018 12:08:02 PM	41858
Surr: DNOP	0	0	50.6-138	S	%Rec	10	12/4/2018 12:08:02 PM	41858
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	12/5/2018 2:09:43 PM	41854
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Arsenic	ND	0.029	5.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Barium	2.4	0.0011	100	J	mg/L	1	12/3/2018 5:48:58 PM	41835
Cadmium	ND	0.00090	1.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Chromium	ND	0.00070	5.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Lead	0.018	0.011	5.0	J	mg/L	1	12/3/2018 5:48:58 PM	41835
Selenium	ND	0.048	1.0		mg/L	1	12/3/2018 5:48:58 PM	41835
Silver	0.013	0.00070	5.0	J	mg/L	1	12/3/2018 5:48:58 PM	41835
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Benzene	ND	0.082	0.50	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Toluene	0.59	0.096	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Ethylbenzene	0.64	0.058	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Methyl tert-butyl ether (MTBE)	ND	0.24	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,4-Trimethylbenzene	8.5	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,3,5-Trimethylbenzene	2.2	0.097	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dichloroethane (EDC)	0.33	0.10	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dibromoethane (EDB)	ND	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Naphthalene	26	0.20	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1-Methylnaphthalene	87	0.57	4.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Methylnaphthalene	99	0.44	4.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Acetone	1.9	0.83	15	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromobenzene	ND	0.096	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromodichloromethane	ND	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromoform	ND	0.090	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Bromomethane	0.40	0.24	3.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Butanone	1.9	1.2	10	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Carbon disulfide	ND	0.33	10	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Carbon tetrachloride	ND	0.095	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chlorobenzene	ND	0.13	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chloroethane	ND	0.15	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chloroform	0.10	0.080	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Chloromethane	0.46	0.096	3.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Chlorotoluene	ND	0.087	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803

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
PQL	Practical Quanitative Limit	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: Marathon
Client Sample ID: Rail Pipe Excavated Soils #3
Project: Rail Pipe Soil Cleanup
Collection Date: 11/28/2018 8:40:00 AM
Lab ID: 1811D83-001 **Matrix:** SOIL **Received Date:** 11/28/2018 3:56:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
4-Chlorotoluene	ND	0.082	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
cis-1,2-DCE	ND	0.14	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
cis-1,3-Dichloropropene	ND	0.084	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dibromo-3-chloropropane	ND	0.10	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Dibromochloromethane	ND	0.071	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Dibromomethane	ND	0.11	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dichlorobenzene	ND	0.082	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,3-Dichlorobenzene	ND	0.087	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,4-Dichlorobenzene	ND	0.084	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Dichlorodifluoromethane	ND	0.23	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1-Dichloroethane	ND	0.064	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1-Dichloroethene	ND	0.40	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2-Dichloropropane	ND	0.073	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,3-Dichloropropane	ND	0.11	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2,2-Dichloropropane	ND	0.33	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1-Dichloropropene	ND	0.091	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Hexachlorobutadiene	ND	0.10	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
2-Hexanone	0.88	0.17	10	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Isopropylbenzene	0.49	0.072	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
4-Isopropyltoluene	1.0	0.083	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
4-Methyl-2-pentanone	ND	0.19	10	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Methylene chloride	ND	0.18	3.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
n-Butylbenzene	1.9	0.093	3.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
n-Propylbenzene	1.1	0.080	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
sec-Butylbenzene	0.99	0.11	1.0	JD	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Styrene	ND	0.078	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
tert-Butylbenzene	ND	0.094	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,1,2-Tetrachloroethane	ND	0.068	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,2,2-Tetrachloroethane	ND	0.10	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Tetrachloroethene (PCE)	ND	0.080	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
trans-1,2-DCE	ND	0.091	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
trans-1,3-Dichloropropene	ND	0.11	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,3-Trichlorobenzene	ND	0.088	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,4-Trichlorobenzene	ND	0.10	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,1-Trichloroethane	ND	0.090	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,1,2-Trichloroethane	ND	0.071	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Trichloroethene (TCE)	ND	0.12	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Trichlorofluoromethane	ND	0.34	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
1,2,3-Trichloropropane	ND	0.16	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803

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
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Rail Pipe Excavated Soils #3
Project: Rail Pipe Soil Cleanup
Collection Date: 11/28/2018 8:40:00 AM
Lab ID: 1811D83-001 **Matrix:** SOIL **Received Date:** 11/28/2018 3:56:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **AG**	
Vinyl chloride	ND	0.065	1.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Xylenes, Total	4.2	0.25	2.0	D	mg/Kg	20	12/3/2018 2:29:28 PM	41803
Surr: Dibromofluoromethane	93.8		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	41803
Surr: 1,2-Dichloroethane-d4	97.9		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	41803
Surr: Toluene-d8	101		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	41803
Surr: 4-Bromofluorobenzene	91.0		70-130	D	%Rec	20	12/3/2018 2:29:28 PM	41803
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **AG**	
Gasoline Range Organics (GRO)	200	24	100		mg/Kg	20	12/3/2018 2:29:28 PM	41803
Surr: BFB	95.8	0	70-130		%Rec	20	12/3/2018 2:29:28 PM	41803

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
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID	**LCS-41858**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41858**		RunNo:	**56060**				
Prep Date:	**12/3/2018**	Analysis Date:	**12/4/2018**		SeqNo:	**1872032**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.8	70	130			
Surr: DNOP	4.9		5.000		97.4	50.6	138			

Sample ID	**MB-41858**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41858**		RunNo:	**56060**				
Prep Date:	**12/3/2018**	Analysis Date:	**12/4/2018**		SeqNo:	**1872034**	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	50.6	138			

Sample ID	**LCS-41902**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41902**		RunNo:	**56089**				
Prep Date:	**12/5/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1873284**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		92.7	50.6	138			

Sample ID	**MB-41902**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41902**		RunNo:	**56089**				
Prep Date:	**12/5/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1873285**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		102	50.6	138			

Sample ID	**1812156-007AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**BatchQC**	Batch ID:	**41902**		RunNo:	**56089**				
Prep Date:	**12/5/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1874390**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		4.907		103	50.6	138			

Sample ID	**1812156-007AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**BatchQC**	Batch ID:	**41902**		RunNo:	**56089**				
Prep Date:	**12/5/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1874391**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.8		4.980		95.7	50.6	138	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
PQL	Practical Quanitative Limit	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#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID **1811d77-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **BatchQC**	Batch ID: **41803**	RunNo: **56018**
Prep Date: **11/29/2018**	Analysis Date: **11/30/2018**	SeqNo: **1869941** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0.01395	102	68.9	131			
Toluene	1.0	0.050	1.000	0.01040	100	64.3	137			
Chlorobenzene	1.0	0.050	1.000	0	102	65.9	143			
1,1-Dichloroethene	1.1	0.050	1.000	0	114	53.4	150			
Trichloroethene (TCE)	0.98	0.050	1.000	0	98.3	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.0	70	130			
Surr: Toluene-d8	0.48		0.5000		96.1	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.5	70	130			

Sample ID **1811d77-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **BatchQC**	Batch ID: **41803**	RunNo: **56018**
Prep Date: **11/29/2018**	Analysis Date: **11/30/2018**	SeqNo: **1869942** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0.01395	110	68.9	131	7.55	20	
Toluene	1.0	0.050	1.000	0.01040	99.2	64.3	137	0.949	20	
Chlorobenzene	1.0	0.050	1.000	0	102	65.9	143	0.318	20	
1,1-Dichloroethene	1.2	0.050	1.000	0	122	53.4	150	7.08	20	
Trichloroethene (TCE)	1.1	0.050	1.000	0	106	70	130	7.17	20	
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130	0	0	
Surr: Toluene-d8	0.46		0.5000		92.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.8	70	130	0	0	

Sample ID **lcs-41803**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **41803**	RunNo: **56018**
Prep Date: **11/29/2018**	Analysis Date: **11/30/2018**	SeqNo: **1869949** 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	103	70	130			
Toluene	0.98	0.050	1.000	0	97.5	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	105	50.8	164			
Trichloroethene (TCE)	0.96	0.050	1.000	0	96.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.5	70	130			
Surr: Toluene-d8	0.47		0.5000		93.9	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.0	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
PQL	Practical Quanitative Limit	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#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID **mb-41803**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **41803**	RunNo: **56018**
Prep Date: **11/29/2018**	Analysis Date: **11/30/2018**	SeqNo: **1869950** 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:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID **mb-41803**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **41803**	RunNo: **56018**
Prep Date: **11/29/2018**	Analysis Date: **11/30/2018**	SeqNo: **1869950** 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		98.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.48		0.5000		96.0	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.5	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
PQL	Practical Quanitative Limit	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#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-41854**	SampType:	**MBLK**		TestCode:	**MERCURY, TCLP**					
Client ID:	**PBW**	Batch ID:	**41854**		RunNo:	**56100**					
Prep Date:	**12/3/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1873667**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020									

Sample ID	**LCS-41854**	SampType:	**LCS**		TestCode:	**MERCURY, TCLP**					
Client ID:	**LCSW**	Batch ID:	**41854**		RunNo:	**56100**					
Prep Date:	**12/3/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1873668**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0050	0.020	0.005000	0	99.3	80	120			J	

Sample ID	**1811D78-001AMS**	SampType:	**MS**		TestCode:	**MERCURY, TCLP**					
Client ID:	**BatchQC**	Batch ID:	**41854**		RunNo:	**56100**					
Prep Date:	**12/3/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1873680**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0050	0.020	0.005000	0	100	75	125			J	

Sample ID	**1811D78-001AMSD**	SampType:	**MSD**		TestCode:	**MERCURY, TCLP**					
Client ID:	**BatchQC**	Batch ID:	**41854**		RunNo:	**56100**					
Prep Date:	**12/3/2018**	Analysis Date:	**12/5/2018**		SeqNo:	**1873683**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0050	0.020	0.005000	0	101	75	125	0.557	20	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
PQL	Practical Quanitative Limit	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#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID	**MB-41835**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**PBW**	Batch ID:	**41835**	RunNo:	**56054**					
Prep Date:	**11/30/2018**	Analysis Date:	**12/3/2018**	SeqNo:	**1871904**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	**LCS-41835**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**LCSW**	Batch ID:	**41835**	RunNo:	**56054**					
Prep Date:	**11/30/2018**	Analysis Date:	**12/3/2018**	SeqNo:	**1871906**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	5.0	0.5000	0	99.7	80	120			J
Barium	0.47	100	0.5000	0	93.0	80	120			J
Cadmium	0.48	1.0	0.5000	0	97.0	80	120			J
Chromium	0.47	5.0	0.5000	0	93.9	80	120			J
Lead	0.46	5.0	0.5000	0	92.5	80	120			J
Selenium	0.52	1.0	0.5000	0	104	80	120			J
Silver	0.10	5.0	0.1000	0	102	80	120			J

Sample ID	**1811D78-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**BatchQC**	Batch ID:	**41835**	RunNo:	**56054**					
Prep Date:	**11/30/2018**	Analysis Date:	**12/3/2018**	SeqNo:	**1871913**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	5.0	0.5000	0	99.2	75	125			J
Barium	1.8	100	0.5000	1.396	88.5	75	125			J
Cadmium	0.48	1.0	0.5000	0	96.3	75	125			J
Chromium	0.45	5.0	0.5000	0	89.1	75	125			J
Lead	0.44	5.0	0.5000	0	88.7	75	125			J
Selenium	0.51	1.0	0.5000	0	102	75	125			J
Silver	0.12	5.0	0.1000	0.01417	106	75	125			J

Sample ID	**1811D78-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**BatchQC**	Batch ID:	**41835**	RunNo:	**56054**					
Prep Date:	**11/30/2018**	Analysis Date:	**12/3/2018**	SeqNo:	**1871916**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	5.0	0.5000	0	100	75	125	0.751	20	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
PQL	Practical Quanitative Limit	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#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID	**1811D78-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 6010B: TCLP Metals**
Client ID:	**BatchQC**	Batch ID:	**41835**	RunNo:	**56054**
Prep Date:	**11/30/2018**	Analysis Date:	**12/3/2018**	SeqNo:	**1871916** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1.9	100	0.5000	1.396	99.5	75	125	2.95	20	J
Cadmium	0.50	1.0	0.5000	0	99.5	75	125	3.32	20	J
Chromium	0.46	5.0	0.5000	0	92.5	75	125	3.78	20	J
Lead	0.46	5.0	0.5000	0	92.4	75	125	4.06	20	J
Selenium	0.51	1.0	0.5000	0	102	75	125	0.171	20	J
Silver	0.12	5.0	0.1000	0.01417	110	75	125	3.21	20	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
PQL	Practical Quanitative Limit	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#: **1811D83**

07-Dec-18

Client: Marathon

Project: Rail Pipe Soil Cleanup

Sample ID	**mb-41803**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**41803**		RunNo:	**56018**					
Prep Date:	**11/29/2018**	Analysis Date:	**11/30/2018**		SeqNo:	**1869992**	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	**lcs-41803**	SampType:	**LCS**		TestCode:	**EPA Method 8015D Mod: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**41803**		RunNo:	**56018**					
Prep Date:	**11/29/2018**	Analysis Date:	**11/30/2018**		SeqNo:	**1870018**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		28	5.0	25.00	0	111	70	130			
Surr: BFB		520		500.0		104	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
PQL	Practical Quanitative Limit	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: MARATHON GALLUP Work Order Number: 1811D83 RcptNo: 1

Received By: Isaiah Ortiz 11/28/2018 3:56:00 PM IO

Completed By: Isaiah Ortiz 11/28/2018 4:41:16 PM IO

Reviewed By: DAD 11/29/18

CB: ENM 11/29/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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? _____

ENM 11/29/18

Checked by: _____

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			

Chain-of-Custody Record

Client: Marathon

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3721

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush ASAP

Project Name:

Rail Pipe Soil Cleanup

Project #:

Project Manager:

Janelle Vestal

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1

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. 1811083	Reactivity	RCRA 8 METALS - TCLP	8310 PAH	8270 - Semi-VOCs	8260B - VOCs	R8015 D (DRO/GRO/MRO)	Benzene - TCLP	Air Bubbles (Y or N)
11/28/2018	8:40	Soil	Rail Pipe Excavated Soils #3	2 - 9oz	None	-001		X			X	X		

Date: 11/28/18 Time: 11:29 Relinquished by: Janelle Vestal

Received by: Date 11/28/18 Time 11:32

Date: 11/28/18 Time: 1556 Relinquished by:

Received by: client Date 11/28/18 Time 1556

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.