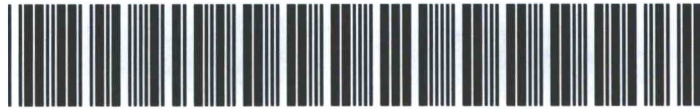




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WESTERN REFINING COMPANY L.P.

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2016 ANNUAL REPORT

FORMER GIANT BLOOMFIELD REFINERY
BLOOMFIELD, NEW MEXICO
DISCHARGE PERMIT GW-040

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WESTERN REFINING SOUTHWEST, INC.
Bloomfield, New Mexico

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2016 ANNUAL REPORT
FORMER GIANT BLOOMFIELD REFINERY
BLOOMFIELD, NEW MEXICO
DISCHARGE PERMIT GW-040

MARCH 2017

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EXECUTIVE SUMMARY

This 2016 Annual Report summarizes work completed from January 2016 through January 2017 at the former Giant Bloomfield Refinery (Site) in Bloomfield, New Mexico. The scope of work for this project was continued monitoring of petroleum hydrocarbon impacts to groundwater, which were identified upon cessation of refinery operations. The Site is operated by Western Refining Southwest, Inc. (Western) and regulated by the New Mexico Oil Conservation Division (NMOCD) through Discharge Permit GW-040 that was originally issued for a groundwater recovery and remediation system consisting of groundwater recovery wells, a carbon filtration unit, and a treated water infiltration trench. Prior to August 2015, the groundwater recovery system had been in operation for approximately 27 years and had significantly improved groundwater conditions over that time. As noted in previous annual reports, sampling of the influent to the treatment system had not detected the presence of volatile organic compounds (VOCs) in 15 years. Because of these observed conditions, in 2015 Western implemented more intensive monitoring of the groundwater conditions to evaluate background water quality and the effectiveness of the recovery system. To facilitate the evaluation, compliance samples were analyzed for additional parameters and additional groundwater samples were collected. The recovery system was shut off in August 2015 and Western monitored groundwater elevations, water quality and phase-separated hydrocarbon (PSH) accumulation for a 5-month period. Preliminary observations indicated no measurable change in groundwater conditions after ceasing the recovery operations. Based on the favorable observations in 2015, Western did not resume pumping operations, but continued groundwater monitoring in 2016 to confirm equilibrium conditions and better characterize residual impact.

Annual Compliance Monitoring

Annual groundwater monitoring was conducted in January 2017. Samples were collected from 13 groundwater monitoring wells (GRW-3, GRW-6, GBR-17, GBR-24D, GBR-30, GBR-31, GBR-32, GBR-48, GBR-49, GBR-50, GBR-51, GBR-52, and SHS-8) located within and south of the Site as specified in Discharge Permit GW-040. Groundwater samples were analyzed for the same parameters as the wells as specified by Discharge Permit GW-040. Laboratory analytical results indicated VOCs and polycyclic aromatic hydrocarbons (PAHs) were not detected in exceedance of the New Mexico Water Quality Control Commission (NMWQCC) standards in groundwater samples collected from monitoring and recovery wells.

Enhanced Monitoring

An expanded analysis of water quality was voluntarily implemented in an effort to further understand background or naturally occurring conditions as well as potential influence from the historical up-gradient landfill release. Groundwater samples collected from the monitoring wells GRW-3, GRW-6, GBR-17, GBR-24D, GBR-30, GBR-31, GBR-32, GBR-48, GBR-49, GBR-50, GBR-51, and GBR-52 were analyzed for general water chemistry (GWC) parameters including pH by EPA Standard Method 4500, EC by EPA Method 2510B, total dissolved solids (TDS) by EPA Standard Method 2540C, alkalinity by EPA Standard Method 2320B, hardness by EPA Standard Method 2340B, anions (bromide, chloride, sulfate, fluoride, nitrite, nitrate, and phosphorus) by EPA Method 300.0, and cations (calcium, iron, magnesium, potassium, and sodium) by EPA Method 200.7. Additional analysis included groundwater samples collected from monitoring wells GBR-32, GBR-48, GBR-49 and, GBR-50 for total metals according to EPA Method 200.7 and 200.8 and mercury according to EPA Method 245.1. PAHs by EPA Method 8270C

were analyzed in groundwater samples from GRW-3, GRW-6, GBR-30, and GBR-31. The results are used to evaluate the trend of natural background groundwater quality within the vicinity of the facility.

Voluntary Monitoring of Static Groundwater Conditions

Sampling activities as part of voluntary monitoring of static groundwater conditions was conducted in March, July, and October 2016. Monitoring wells GBR-8, GBR-11, GBR-20, GBR-21D, GBR-22, GBR-25, GBR-26, GBR-34, SHS-2, SHS-8, and SHS-9 were sampled to match wells sampled in August 2015 prior to the shutdown of the remediation system. Samples from these monitoring wells were collected and analyzed for chloride by United States Environmental Protection Agency (EPA) Method 300.0, benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260B, total petroleum hydrocarbon (TPH)-gasoline range organics (GRO) by EPA Method 8015D, and TPH-diesel range organics (DRO) by EPA Method 8015M/D. Laboratory analytical results indicated chloride concentrations exceeded NMWQCC standards in 5 of the 11 wells sampled, BTEX was not detected in exceedance of NMWQCC standards, and all 11 wells sampled contained concentrations of DRO and GRO. Sample results have indicated no significant changes in concentrations of contaminants from sampling conducted prior to shut down of the remediation system to results from sampling conducted after remediation system shutdown.

1.0 INTRODUCTION

The 2016 Annual Report summarizes groundwater monitoring activities completed between January 2016 and January 2017 at the former Giant Bloomfield Refinery (Site) in San Juan County, New Mexico. The Site is operated by Western Refining Southwest, Inc. (Western) and currently regulated by the New Mexico Oil Conservation Division (NMOCD) under a discharge permit (GW-040).

1.1 SITE DESCRIPTION

The Site is located on the northeast corner of United States (U.S.) Highway 64 and County Road 3500, approximately five miles west of Bloomfield, New Mexico, in the southwest quarter of Section 22 and the northwest quarter of Section 27, Township 29 North, Range 12 West in San Juan County, New Mexico (Figure 1). The remediation system includes a control building, two carbon filtration tanks, an infiltration trench, groundwater monitoring wells, and groundwater recovery wells.

1.2 SITE HISTORY

The former refinery, under ownership of Giant Industries, Arizona (Giant), produced leaded and unleaded gasoline, diesel, kerosene, and other refined petroleum products from 1974 to 1982 and is presently inactive. The refining operations and subsequent truck loading and unloading activities impacted groundwater, which was identified and investigated as part of the site closure requirements prescribed by the New Mexico Oil Conservation Division (NMOCD) in 1986. Details of a subsurface investigation and initial remediation efforts are contained in a 1987 report entitled, *Soil and Groundwater Investigations and Remedial Action Plan, Giant Industries, Inc. Bloomfield Refinery, Bloomfield, New Mexico*. The investigation identified three source areas (Figure 2):

- Northern Area (Diesel Spill Area): 10,000 to 15,000 gallons of diesel were released from a pipeline in 1985;
- Central Area (Truck Fueling Area): 15,000 gallons of diesel were released from a pipeline in 1986; and
- Southern Area: Historical releases from a former firefighting drill area east and up-gradient of the Site that may have collected in a former seep and a stormwater catchment area.

Concurrent with refinery operations, the former Lee Acres Landfill located up-gradient of the Site operated as a San Juan County landfill from 1962 to 1986 (Figure 1). Landfill operations included solid waste disposal in trenches and a series of lagoons used for disposal of a variety of liquid wastes. The NMOCD sampled the lagoons in 1985 and demonstrated that the liquids in the impoundments contained a variety of chlorinated solvents, petroleum hydrocarbon constituents, heavy metals, and salts. In April 1985, a breach in the dike retaining the lagoons released liquid wastes into an arroyo west of the Site. The arroyo drains south toward the Lee Acres Subdivision, where the NMOCD and the New Mexico Environment Department (NMED) identified impacted groundwater in domestic water wells in 1988. In response, the NMOCD required Giant to investigate petroleum hydrocarbon impacts to groundwater downgradient of the refinery in the Lee Acres Subdivision, and the NMED conducted a separate investigation to identify potential impacts from the landfill. The results of the subsurface investigation conducted by Giant south of the refinery are contained in three volumes of the 1992

report, *Remedial Investigation Report for Lee Acres Landfill*. The NMED, in conjunction with the Bureau of Land Management (BLM) and the United States Geological Survey (USGS), published their results in three reports referenced in Section 5.0 of this report.

The investigations identified two separate plumes of impacted groundwater that commingled across the refinery and flowed downgradient into the Lee Acres Subdivision. Groundwater contaminants detected in the refinery plume included phase-separated hydrocarbons (PSH) and dissolved-phase petroleum hydrocarbons. The dissolved-phase constituents included benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, and 1,2 dichloroethane (EDC). The landfill contaminant plume contained total dissolved solids (TDS), chloride, sulfate, manganese, metals, BTEX, naphthalene, 1,1 dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, tetrachloroethene (PCE), 1,1,1-trichloroethane, and trichloroethene.

Beginning in 1988, Giant installed a groundwater recovery, treatment, and disposal system in stages to restrict migration of contaminants and to remediate groundwater impacts caused by Giant's former operations. A total of 45 monitoring wells were initially installed and designated GBR wells (Figure 2). Of these 45 monitoring wells, 11 were converted to recovery wells and re-named with GRW designations. An additional 17 monitoring wells were installed in the Lee Acres Subdivision and designated as SHS wells. Four SHS wells initially operated as recovery wells. Giant pumped groundwater from the recovery wells into storage tanks, then treated the groundwater with an air stripper and carbon filtration and re-injected treated groundwater into the subsurface through two infiltration galleries. Western Refining Southwest, Inc. (Western) acquired the Site from Giant in June 2007.

As groundwater quality improved over time, the remediation system was gradually simplified once product accumulation declined which included the elimination of the air stripper and storage of recovered water in aboveground storage tanks in the 1980s. Following initial contaminant reduction, the groundwater remediation system operated in an operation and maintenance mode. Concentrations of contaminants within the remediation influent and effluent systems were below laboratory detection limits for 13 years. In 2008, Western conducted a supplemental evaluation of the remedial operations, which included shutting down the remediation system and sampling groundwater wells under static conditions in an effort to redefine the area of impact and assess effectiveness of the remediation system. Existing equipment was inspected and modified to optimize performance. Results from the sampling event were included in the *2008 Annual Report* submitted to the NMOCD. Pumping and treating operations were resumed in February 2009 and continued through 2014. By 2015, the system consisted of only 9 active groundwater recovery wells that pumped groundwater directly into the carbon filtration tanks. The water then passed through the treated water infiltration trench.

Following 13 years of influent and effluent sampling without the detection of volatile organic compounds (VOCs), Western conducted another assessment of site groundwater conditions in 2015. Western sampled and monitored select wells to characterize groundwater under active pumping conditions, then shut down the recovery system to allow groundwater to equilibrate. In August 2015, the groundwater recovery system was turned off and a second sampling and monitoring event was conducted on the same groundwater monitoring wells to compare active groundwater recovery to static conditions. Results of the baseline assessment and notification of the system shutdown were included in the *2015 Annual Report*. Assessment results suggested the remediation system had successfully remediated the groundwater impact it was originally designed to address, but was no longer an efficient

method for remediating residual impact at the Site. As such, the recovery system has remained shut down since August 2015, Western has since implemented additional voluntary monitoring activities in addition to the compliance monitoring required under the Facility Discharge Permit to better characterize the residual impact and qualify up-gradient groundwater quality.

1.3 SITE HYDROLOGY

The Site is located on weathered outcrops of the Nacimiento Formation, which is comprised of shales, sandstones, and siltstones of Cretaceous-Tertiary age. The San Juan River is approximately 2,000 feet south of the Site. Immediately west is a large unnamed arroyo, which is underlain by 30 feet to 60 feet of Quaternary alluvial sediments. Older Quaternary terrace deposits of cobbles and boulders were observed on the interfluvial ridges adjacent to the arroyo. These terrace deposits may have been utilized as fill on the Site. The outcropping surfaces of the Nacimiento Formation have been eroded to form a paleo channel that appears to be similar in morphology to the existing surface arroyo located to the west of the Site. The bedrock is overlain by recent alluvial deposits (gravel, sand, silt, and clay), which thicken toward the south-southwest as illustrated on the cross section on Figure 3 and Figure 4.

The subsurface geology is a controlling feature for groundwater flow direction and potential contaminant migration. Shallow groundwater is generally unconfined with some local areas potentially under semi-confined conditions. There are two aquifers of concern that are in direct hydraulic communication: a shallow aquifer composed of recent alluvial materials and a bedrock aquifer that exists in the underlying Nacimiento Formation (Figures 3 and 4, respectively). The alluvial aquifer generally has the higher permeability of the two aquifers, and recovery wells completed within this aquifer have higher yields with larger radii of influence.

1.4 SCOPE OF WORK

Pursuant to the sampling requirements outlined in the facility discharged permit (GW-040), this Report provides a summary of activities performed and results of groundwater samples collected as specified wells. In addition, this report includes the results of additional voluntary monitoring activities conducted to monitor the background water quality as well as to monitor the static groundwater conditions following the shutdown of the remediation system in August 2015. A summary of field activities, results, and conclusions related to annual discharge permit compliance and monitoring results are presented in the subsequent sections of this report.

2.0 METHODOLOGY

2.1 ANNUAL COMPLIANCE MONITORING

Following the shutdown of the groundwater recovery system in August 2015, annual compliance monitoring activities included the collection of groundwater samples and field quality information from selected monitoring wells specified in the Discharge Permit GW-040.

2.1.1 GROUNDWATER MONITORING

Quarterly groundwater monitoring included measurements of depth-to-groundwater and depth-to-product at all monitoring and recovery wells using a Keck oil-water interface probe. The interface probe was decontaminated with AlconoxTM soap and rinsed with de-ionized water before each measurement. Field measurements were used to calculate quarterly groundwater elevations at the Site to determine direction of groundwater flow. The recovery pumps were removed from the previously active recovery wells in August 2015 following the shutdown of the remediation system; therefore calculated groundwater elevations represent static conditions.

Annual groundwater samples were inadvertently not collected in 2016; however, the required annual samples were collected in January 2017 and are included in this report. Samples were collected from 13 groundwater monitoring wells (GRW-3, GRW-6, GBR-17, GBR-24D, GBR-30, GBR-31, GBR-32, GBR-48, GBR-49, GBR-50, GBR-51, GBR-52, and SHS-8) located within and south of the Site as specified in Discharge Permit GW-040. Figure 5 show the approximate location of each monitoring well. The volume of groundwater in the wells was calculated and a minimum of three well casing volumes of groundwater was purged from each well using a disposable bailer. As groundwater was extracted, pH, electrical conductivity (EC), and temperature were monitored. Wells were purged until these properties stabilized or the well was bailed dry, indicating the purge water was representative of aquifer conditions. Stabilization was defined as three consecutive stable readings for each water property (plus or minus (\pm) 0.4 units for pH, ± 10 percent for EC, and ± 2 degrees Celsius for temperature). Once each well was properly purged, groundwater samples were collected in bottles or vials and shipped to Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, New Mexico. Groundwater samples were analyzed for VOCs according to United States Environmental Protection Agency (EPA) Method 8260B. The groundwater sample collected from GBR-24D was also analyzed for polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270C.

2.2 ENHANCED MONITORING

Additional groundwater samples were collected from selected wells as part of an enhanced voluntary monitoring effort to further understand background or naturally occurring conditions as well as potential influence from the historical up-gradient landfill release. Additional groundwater samples were collected from monitoring well GRW-3, GRW-6, GBR-17, GBR-24D, GBR-30, GBR-31, GBR-32, GBR-48, GBR-49, GBR-50, GBR-51, and GBR-52. The samples were analyzed for general water chemistry (GWC) parameters including pH by EPA Standard Method 4500, EC by EPA Method 2510B, total dissolved solids (TDS) by EPA Standard Method 2540C, alkalinity by EPA Standard Method 2320B, hardness by EPA Standard Method 2340B, anions (bromide, chloride, sulfate, fluoride, nitrite, nitrate, and phosphorus) by EPA Method 300.0, and cations (calcium, iron, magnesium, potassium, and sodium)

by EPA Method 200.7. Additional analysis included groundwater samples collected from monitoring wells GBR-32, GBR-48, GBR-49 and, GBR-50 for total metals according to EPA Method 200.7 and 200.8 and mercury according to EPA Method 245.1. PAHs by EPA Method 8270C were analyzed in groundwater samples from GRW-3, GRW-6, GBR-30, and GBR-31. Figure 5 shows the approximate location of each sample location.

2.3 VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS

Following the shutdown of the remediation system in August 2015, additional monitoring efforts were voluntarily implemented in 2016 to monitor the effect of the system shutdown and long-term static conditions within the site.

2.3.1 GROUNDWATER SAMPLING

Historical documentation was reviewed to determine which wells had the most potential to contain impacted groundwater or to exhibit a change in water quality following the shutdown of the groundwater recovery system. Monitoring wells GBR-8, GBR-11, GBR-20, GBR-21D, GBR-22, GBR-25, GBR-26, GBR-34, SHS-2, SHS-8, and SHS-9 were selected due to radius of influence of actively pumping recovery wells and/or historical documentation of PSH measured in the monitoring wells (Figure 5).

Prior to collecting groundwater samples, depth-to-groundwater measurements were collected with a Keck oil-water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with de-ionized water before each measurement. The volume of groundwater in the monitoring wells was calculated and a minimum of three well casing volumes of groundwater was purged from each well using a disposable bailer. As groundwater was extracted, pH, EC, and temperature were monitored. Monitoring wells were purged until these properties stabilized or the well was bailed dry, indicating the purge water was representative of aquifer conditions.

Groundwater samples were collected in March, July, and October of 2016 and analyzed for chloride by EPA Method 300.0, BTEX by EPA Method 8260B, total petroleum hydrocarbon (TPH)-gasoline range organics (GRO) by EPA Method 8015D, and TPH-diesel range organics (DRO) by EPA Method 8015M/D. Groundwater samples were collected in appropriate pre-cleaned and pre-preserved (when applicable) sample bottles or glass vials and immediately placed on ice. The samples were shipped on ice under strict chain-of-custody protocol to HEAL within designated holding times. Samples were labeled with the date and time of collection, sample designation, project name, collector's name, and parameters to be analyzed.

2.3.2 FIELD OBSERVATIONS AND MONITORING

In 2016, field parameters were collected monthly from wells located within the facility boundary and within the easement south of Highway 64. This did not include up-gradient monitoring wells, cross-gradient wells, previously active recovery wells, nor wells located south of monitoring well SHS-19 (Figure 5). The field parameters collected included depth-to-water, depth-to-product, and field headspace measurement. Headspace measurements were collected using a calibrated Photo Ionization Detector (PID) from the well top of casing. Field observations such as the observed presence of sheen and odor were documented during bailing of a well.

3.0 RESULTS

3.1 ANNUAL COMPLIANCE

Results of compliance groundwater monitoring are presented in the following sections.

3.1.1 GROUNDWATER MONITORING

Groundwater elevations measured in groundwater monitoring wells are presented in Table 1, and quarterly potentiometric surface maps are depicted on Figures 6 through 9. Groundwater flow direction was consistently toward the southwest throughout the year.

Laboratory analytical results from annual groundwater compliance sampling are presented in Table 2, and the complete laboratory analytical reports are presented in Appendix A. Isopach maps and geologic cross sections illustrating the distribution of analytes are not included because the sampling events do not include wells from all of the current source areas. Such a presentation of results would not be indicative of actual conditions at the Site. Laboratory analytical results as compared to New Mexico Water Quality Control Commission (NMWQCC) standards are summarized below:

- VOCs were detected in the annual groundwater samples, but only in trace concentrations that did not exceed NMWQCC standards;
 - EDC was detected in groundwater from monitoring well GBR-24D at 1.1 ug/L;
 - PCE was detected in groundwater from monitoring wells GBR-32 and GBR-49 at 1.3 ug/L; and
 - Ethylbenzene was detected in groundwater from monitoring well SHS-8 at 1.1 ug/L.
- PAHs were not detected above the respective laboratory detection limit for samples collected at GBR-24D.

3.2 ENHANCED MONITORING

As part of a voluntary enhanced monitoring effort, additional groundwater samples were collected from selected wells to monitor the naturally occurring groundwater conditions. A summary of the analytical results is provided in Table 4. The samples were compared to respective NMWQCC standards. The results are used to evaluate the trend of natural background groundwater quality within the vicinity and up-gradient of the facility.

3.3 VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS

Results of the monitoring and sampling conducted in 2016 to confirm equilibrium groundwater conditions include analytical results, depth-to-water, depth-to-product, headspace, and field observations of sheen and odor.

3.3.1 GROUNDWATER SAMPLING

Laboratory analytical results from voluntary groundwater sampling are presented in Table 4, and the complete laboratory analytical reports are presented in Appendix A. The initial baseline sampling results

from activities performed in August 2015 are included in Table 4 for reference. Laboratory analytical results from the voluntary monitoring sampling events are summarized below:

- Chloride concentrations exceeded NMWQCC standards in 5 of the 11 monitoring wells sampled;
- BTEX was detected in the groundwater samples, but only in concentrations that did not exceed NMWQCC standards;
- All monitoring wells sampled contained concentrations of DRO and GRO;
- With the exception of GBR-8, GBR-22, and GBR-34, sample results indicated no significant change in concentrations of contaminants from sampling conducted prior to shut down of the groundwater recovery system to results from sampling conducted after the recovery system was shut down.
- Sample results from GBR-8, GBR-22, and GBR-34 indicated an increase in DRO concentrations from sampling conducted prior to the shutdown of the remediation system to results from sampling conducted after remediation system shutdown. These monitoring wells have been documented as historically impacted wells that have displayed fluctuating levels of PSH in the past. Observations of DRO concentrations in these monitoring wells likely indicate continuing fluctuations that have been observed historically rather than an indication of migrating dissolved phase contaminants that have been influenced by the shutdown of the groundwater recovery system.

3.3.2 FIELD OBSERVATIONS AND MONITORING

Groundwater elevations, PSH measurements, and water quality observations documented from groundwater monitoring and recovery wells are presented in Table 5. The groundwater elevation data was used to develop monthly potentiometric surface maps (Figures 10 through 20). PSH was observed in monitoring wells GBR-5, GBR-7, GBR-20, GBR-23, GBR-34, and GBR-41. Results indicate no significant change in the direction or gradient of groundwater flow across the site when compared to historical results, with the exception of the areas immediately adjacent to previous active recovery wells. The depression of groundwater around previously active groundwater recovery wells no longer exist since the wells are no longer pumping.

4.0 CONCLUSIONS

By 2015, Western had documented over 15 years of pumping and treating groundwater that does not contain detectable concentrations of VOCs. Western shut down the pump and treat system in August 2015 to evaluate its effectiveness at addressing residual impact remaining at the Site. Continued monitoring and sampling conducted under equilibrium conditions in 2016 suggest the remediation system was no longer efficiently influencing the remediation activities at the Site. Conclusions from the continued monitoring of static groundwater conditions at the Site include:

- PSH accumulation did not change significantly from that during pumping conditions:
 - Although measurable PSH was observed in monitoring wells GBR-5, GBR-7, GBR-20, GBR-23, GBR-34, and GBR-41, these wells have historically contained PSH;
 - There was no PSH migration into monitoring wells where PSH had not previously been observed.
- Groundwater impacted by hydrocarbons is characterized by presence of PSH and little to no dissolved-phase hydrocarbons regulated by the NMWQCC.
- Field observations and laboratory analytical results indicate impacted areas are consistent with previously identified source areas and do not appear to have been affected by the cessation of pump and treat remediation efforts.

It is apparent that the remediation system successfully remediated hydrocarbon impact it was originally designed to address. Following reduction in hydrocarbon concentrations, the remediation system's primary purpose was to provide hydraulic control and restrict migration of potential contaminants off site. By shutting down the system to re-establish equilibrium conditions, Western has documented that the remediation system has no effect on existing hydrocarbon groundwater impacts. These impacts consist of PSH accumulations, which based on thicknesses measured and locations consistent with original source areas, are likely adsorbed to soil in the three original source areas. With no active source, the residual contaminants are not likely to migrate with or without the hydraulic barrier introduced by the remediation system.

5.0 REFERENCES

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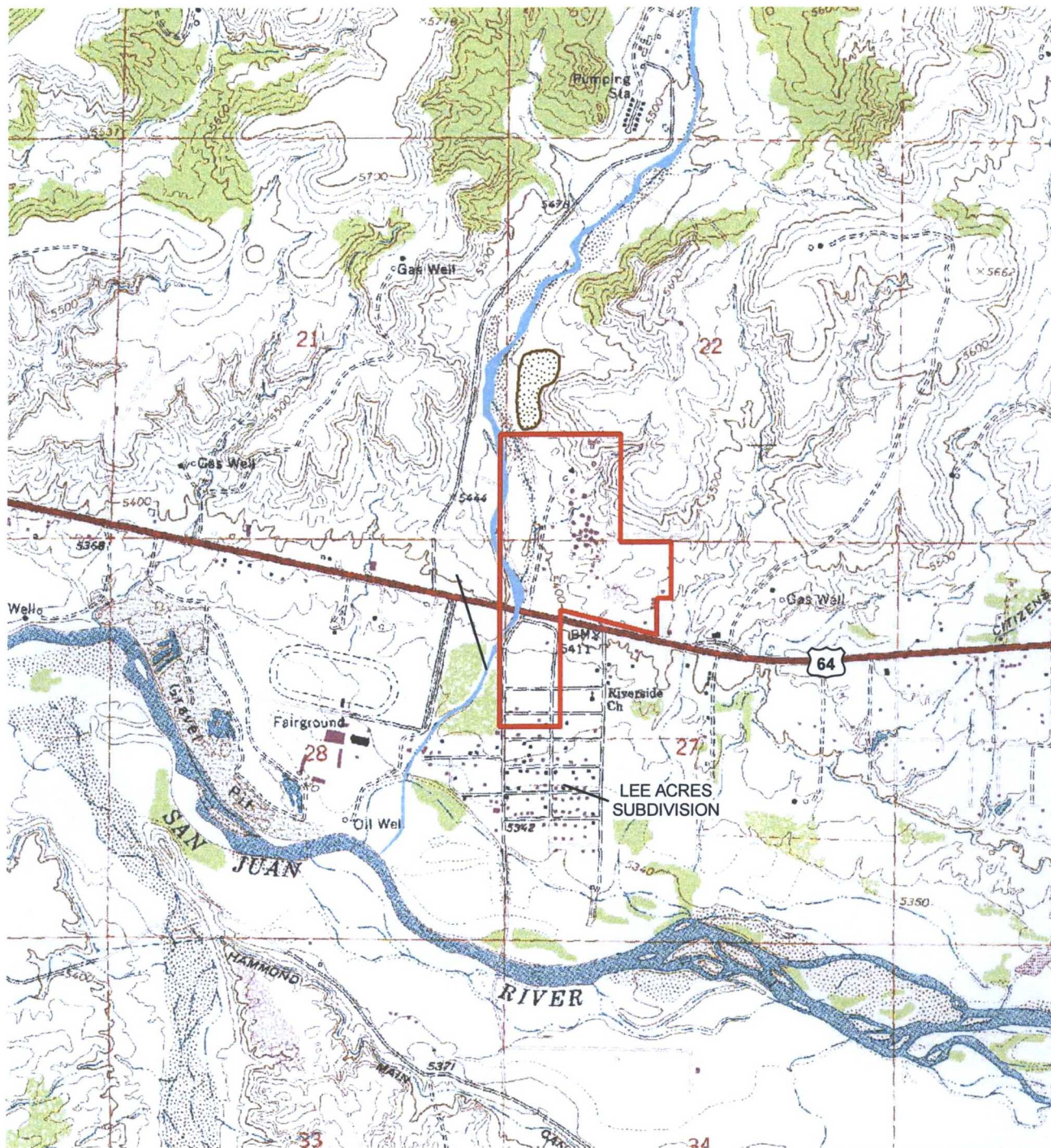
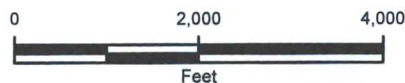


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES



LEGEND

- SITE LOCATION
- ARROYO
- FORMER LEE ACRES LANDFILL

FIGURE 1
SITE LOCATION MAP
 FORMER GIANT BLOOMFIELD REFINERY
 SWSW SEC 22 & WNW SEC 27 T29N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.



TABLE 2
2016 ANNUAL COMPLIANCE - GROUNDWATER LABORATORY ANALYTICAL RESULTS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTRY, NEW MEXICO
WESTERN REFINING PIPELINE, LLC.

Analyte	NMWQCC Standard	Unit	GRW-3 13-Jan	GRW-6 16-Jan	GBR-17 12-Jan	GBR-24D 13-Jan	GBR-30 18-Jan	GBR-31 13-Jan	GBR-32 12-Jan	GBR-48 12-Jan	GBR-49 12-Jan	GBR-50 12-Jan	GBR-51 11-Jan	GBR-52 11-Jan	SHS-8 13-Jan
USEPA Method 8260B - Volatiles															
benzene	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
toluene	750	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	750	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1
methyl tert-butyl ether (MTBE)	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-trimethylbenzene	620	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-trimethylbenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane (EDC)	10	µg/L	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dibromoethane (EDB)	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
naphthalene	NE	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1-methylnaphthalene	NE	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
2-methylnaphthalene	NE	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
acetone	NE	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
bromobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
bromodichloromethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
bromoforn	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
bromomethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3-butanone	NE	µg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
carbon disulfide	NE	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
carbon tetrachloride	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
chlorobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
chloroethane	NE	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
chloroform	100	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
chloromethane	NE	µg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
2-chlorotoluene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-chlorotoluene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-DCE	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-dichloropropene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dibromo-3-chloropropane	NE	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
dibromochloromethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
dibromomethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichlorobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-dichlorobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-dichlorobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
dichlorodifluoromethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-dichloroethane	25	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-dichloroethene	5	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloropropane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-dichloropropane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-dichloropropane	NE	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-dichloropropene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
hexachlorobutadiene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-hexanone	NE	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
isopropylbenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-isopropyltoluene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-methyl-2-pentanone	NE	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
methylene chloride	100	µg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
n-butylbenzene	NE	µg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
n-propylbenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-butylbenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
styrene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-butylbenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-tetrachloroethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-tetrachloroethane	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
tetrachloroethene (PCE)	20	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	1.3	<1.0	<1.0	<1.0	<1.0
trans-1,2-DCE	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-trichlorobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-trichlorobenzene	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-trichloroethane	60	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloroethane	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	100	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichlorofluoromethane	NE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-trichloropropane	NE	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
vinyl chloride	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
xylenes, total	620	µg/L	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5



TABLE 2
2016 ANNUAL COMPLIANCE - GROUNDWATER LABORATORY ANALYTICAL RESULTS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTRY, NEW MEXICO
WESTERN REFINING PIPELINE, LLC.

Analyte	NMWQCC Standard	Unit	GRW-3	GRW-6	GBR-17	GBR-24D	GBR-30	GBR-31	GBR-32	GBR-48	GBR-49	GBR-50	GBR-51	GBR-52	SHS-8
			13-Jan	16-Jan	12-Jan	13-Jan	18-Jan	13-Jan	12-Jan	12-Jan	12-Jan	12-Jan	12-Jan	11-Jan	11-Jan
USEPA Method 8270C:															
Polycyclic Aromatic Hydrocarbons															
naphthalene	30	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
1-methylnaphthalene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-methylnaphthalene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
acenaphthylene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
acenaphthene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
fluorene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
phenanthrene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
anthracene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
fluoranthene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
pyrene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
benzo(a)anthracene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
chrysene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
benzo(k)fluoranthene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
benzo(a)fluoranthene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
benzo(a)pyrene	0.7	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
dibenz(a,h)anthracene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
benzo(g,h,i)perylene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT
indeno(1,2,3-cd)pyrene	NE	µg/L	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:

NE - not established

NMWQCC - New Mexico Water Quality Control Commission

NT - not tested

USEPA - United States Environmental Protection Agency

µg/L - micrograms per liter



TABLE 3
2016 ENHANCED MONITORING DATA - GROUNDWATER LABORATORY ANALYTICAL RESULTS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTRY, NEW MEXICO
WESTERN REFINING PIPELINE, LLC.

Analyte	NMWQCC Standard	Unit	GRW-3	GRW-6	GBR-17	GBR-24D	GBR-30	GBR-31	GBR-32	GBR-48	GBR-49	GBR-50	GBR-51	GBR-52	SHS-8
			13-Jan	16-Jan	12-Jan	13-Jan	18-Jan	13-Jan	12-Jan	12-Jan	12-Jan	12-Jan	11-Jan	11-Jan	13-Jan
USEPA Method 8270C: Polycyclic Aromatic Hydrocarbons															
naphthalene	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
1-methylnaphthalene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
2-methylnaphthalene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
acenaphthylene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
acenaphthene	NE	µg/L	0.72	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
fluorene	NE	µg/L	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
phenanthrene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
anthracene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
fluoranthene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
pyrene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
benz(a)anthracene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
chrysene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
benzo(b)fluoranthene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
benzo(k)fluoranthene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
benzo(a)pyrene	0.7	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
dibenz(a,h)anthracene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
benzo(g,h,i)perylene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
indeno(1,2,3-cd)pyrene	NE	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT	NT	NT	NT	NT	NT	NT
USEPA Method 300.0: Anions															
bromide	NE	mg/L	0.54	0.34	0.26	0.61	3.6	0.33	1.5	0.99	0.98	0.24	0.22	0.32	0.94
chloride	250	mg/L	74	89	46	130	220	84	320	340	210	59	45	58	100
sulfate	600	mg/L	1,200	1,500	1,100	1,900	1,400	1,700	2,000	2,000	1,900	1,500	990	1,400	720
fluoride	1.6	mg/L	<0.50	1.1	0.65	1.6	0.52	0.98	0.83	0.87	0.99	1.1	0.79	0.78	0.76
nitrate + nitrite as N	NE	mg/L	<1.0	<0.10	5.4	<1.0	5.6	4.2	1.0	3.2	1.9	2.4	8.1	7.3	<1.0
phosphorus, orthophosphate (As P)	NE	mg/L	<2.5	<0.50	<10	<10	<2.5	<10	<10	<0.50	<10	<0.50	<10	<10	<0.50
USEPA Method 200.7: Total Metals															
barium	NE	mg/L	NT	NT	NT	NT	NT	NT	0.092	0.52	0.10	0.063	NT	NT	NT
beryllium	NE	mg/L	NT	NT	NT	NT	NT	NT	<0.0020	0.0065	<0.0020	<0.0020	NT	NT	NT
cadmium	0.01	mg/L	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0020	<0.0020	NT	NT	NT
calcium	NE	mg/L	250	340	280	430	430	430	430	650	410	400	300	430	260
chromium	0.05	mg/L	NT	NT	NT	NT	NT	NT	0.33	0.42	0.20	0.36	NT	NT	NT
iron	1.0	mg/L	150	11	15	14	64	1.9	11	89	11	6.8	9.1	18	66
magnesium	NE	mg/L	58	57	28	41	45	38	46	66	43	31	25	36	35
manganese	0.2	mg/L	2.9	17	0.35	1.8	2.3	0.18	1.2	4.8	1.1	1.3	0.47	0.46	3.0
nickel	0.2	mg/L	NT	NT	NT	NT	NT	NT	0.33	0.24	0.20	0.17	NT	NT	NT
potassium	NE	mg/L	1.4	2.3	1.6	9.9	8.6	2.6	2.6	13	2.5	1.8	1.4	3.1	7.4
silver	0.05	mg/L	NT	NT	NT	NT	NT	NT	<0.0050	<0.0050	<0.0050	<0.0050	NT	NT	NT
sodium	NE	mg/L	550	390	220	550	380	420	560	460	430	340	250	290	520
zinc	10	mg/L	NT	NT	NT	NT	NT	NT	0.023	0.20	0.036	0.020	NT	NT	NT
USEPA Method 200.8: Total Metals															
antimony	NE	mg/L	NT	NT	NT	NT	NT	NT	<0.0010	<0.0010	<0.0010	<0.0010	NT	NT	NT
arsenic	0.1	mg/L	NT	NT	NT	NT	NT	NT	<0.0050	0.010	0.0042	0.0043	NT	NT	NT
copper	1.0	mg/L	NT	NT	NT	NT	NT	NT	0.017	0.12	0.013	0.011	NT	NT	NT
lead	0.05	mg/L	NT	NT	NT	NT	NT	NT	0.0048	0.066	0.0072	0.0032	NT	NT	NT
selenium	0.05	mg/L	NT	NT	NT	NT	NT	NT	0.0099	0.014	0.0081	0.0081	NT	NT	NT
thallium	NE	mg/L	NT	NT	NT	NT	NT	NT	<0.00050	0.0014	<0.00050	<0.00050	NT	NT	NT
USEPA Method 245.1: Mercury															
mercury	0.002	mg/L	NT	NT	NT	NT	NT	NT	<0.00020	<0.00020	<0.00020	<0.00020	NT	NT	NT
SM 2340B: Hardness															
hardness (as CaCO3)	NE	mg/L	850	1,100	820	1,300	1,300	1,200	1,300	1,900	1,200	1,100	850	1,200	800
Alkalinity															
alkalinity, total (As CaCO3)	NE	mg/L CaCO3	758.3	364.3	213.2	242.1	217.9	214.8	246.5	276.8	260.7	273.0	208.8	208.5	984.3
carbonate	NE	mg/L CaCO3	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000
bicarbonate	NE	mg/L CaCO3	758.3	364.3	213.2	242.1	217.9	214.8	246.5	276.8	260.7	273.0	208.8	208.5	984.3
Specific Conductance															
specific conductance	NE	µmhos/cm	3,500	3,100	2,300	4,000	3,300	3,400	4,100	4,300	3,800	3,000	2,500	2,900	3,000
USEPA Method SM4500-H+B: pH															
pH	6-9	pH units	7.39	7.00	7.32	7.62	7.27	7.38	7.01	7.26	7.31	7.35	7.43	7.40	7.62
USEPA Method SM2540C Modified: Total Dissolved Solids															
total dissolved solids	1,000	mg/L	2,730	2,580	1,890	3,390	2,580	2,970	3,500	3,360	3,160	2,580	2,080	2,540	2,210

Notes:

mg/L - milligrams per liter

NE - not established

NMWQCC - New Mexico Water Quality Control Commission

NT - not tested

USEPA - United States Environmental Protection Agency

µg/L - micrograms per liter

BOLD - indicates concentration exceeds the NMWQCC standard

TABLE 4
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS -
GROUNDWATER ANALYTICAL RESULTS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Analyte		GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Chloride
NMWQCC Standard		NE	NE	10	750	750	620	250
Unit		mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L
GBR-8	8/6/2015	<0.20	16	<5.0	<5.0	<5.0	<7.5	86
	3/31/2016	<0.25	58	<5.0	<5.0	<5.0	<10	85
	7/26/2016	0.45	280	<5.0	<5.0	<5.0	<10	97
	10/20/2016	<0.25	190	<5.0	<5.0	<5.0	<10	95
GBR-11	8/6/2015	<0.20	1.9	1.7	<1.0	1.1	<1.5	95
	3/31/2016	0.28	5.0	<5.0	<5.0	<5.0	<10	97
	7/26/2016	<0.25	5.3	<5.0	<5.0	<5.0	<10	93
	10/21/2016	<0.25	2.6	<5.0	<5.0	<5.0	<10	92
GBR-20	8/6/2015	0.39	56	<2.0	<2.0	<2.0	<3.0	96
	3/31/2016	0.33	6.9	<5.0	<5.0	17	<10	82
	7/26/2016**	--	--	--	--	--	--	--
	10/20/2016	<0.25	22	5.7	<5.0	24	<10	72
GBR-21D	8/7/2015	<1.0	350	<2.0	<2.0	<2.0	<3.0	330
	3/30/2016	0.059	22	<1.0	<1.0	<1.0	<2.0	380
	7/25/2016	<0.25	21	<5.0	<5.0	<5.0	<10	340
	10/20/2016	<0.25	11	<5.0	<5.0	<5.0	<10	390
GBR-22	8/7/2015	0.34	110	1.7	<2.0	16	6.3	470
	3/30/2016	0.32	140	<5.0	<5.0	23	<10	420
	7/25/2016	0.90	4,800	<5.0	<5.0	41	16	330
	10/20/2016	0.44	260	<5.0	<5.0	15	<10	400
GBR-25	8/7/2015	0.98	92	<5.0	<5.0	15	<7.5	520
	3/30/2016	0.60	250	<5.0	<5.0	16	<10	640
	7/25/2016	1.1	190	<5.0	<5.0	16	<10	450
	10/20/2016	0.73	96	<5.0	<5.0	11	<10	630
GBR-26	8/7/2015	<0.20	1.8	<2.0	<2.0	<2.0	<3.0	170
	3/30/2016	0.053	13	<1.0	<1.0	<1.0	<2.0	140
	7/25/2016#	--	--	--	--	--	--	--
	10/20/2016	<0.25	1.4	<5.0	<5.0	<5.0	<10	67
GBR-34	8/7/2015	13	400	5.2	<5.0	51	49	280
	3/31/2016	1.9	560	<5.0	<5.0	130	48	220
	7/26/2016	1.7	1,400	<5.0	<5.0	34	43	180
	10/20/2016	2.0	2,700	<5.0	<5.0	160	60	180
SHS-2	8/10/2015	<1.0	19	<5.0	<5.0	<5.0	<7.5	280
	3/30/2016	<0.25	18	<5.0	<5.0	<5.0	<10	270
	7/26/2016	0.36	47	<5.0	<5.0	<5.0	<10	250
	10/21/2016	<0.25	15	<5.0	<5.0	<5.0	<10	280
SHS-8	8/7/2015	0.18	23	<1.0	<1.0	14	<1.5	120
	3/30/2016	0.060	6.0	<1.0	<1.0	14	<2.0	97
	7/26/2016	0.46	92	<5.0	<5.0	<5.0	<10	120
	10/21/2016	<0.25	2.2	<5.0	<5.0	<5.0	<10	110
SHS-9	8/7/2015	<0.20	29	<5.0	<5.0	21	<7.5	96
	3/30/2016	0.2	32	<1.0	<1.0	24	<2.0	92
	7/26/2016*	--	--	--	--	--	--	--
	10/21/2016*	--	--	--	--	--	--	--

NOTES:

NE - not established

NMWQCC - New Mexico Water Quality Control Commission

µg/L - micrograms per liter

mg/L - milligrams per liter

-- - no sample collected

- no sample collected due to insufficient groundwater in well

* - no sample collected due to well obstruction

< - indicates result is less than the laboratory quantitation limit

BOLD - indicates concentration exceeds the NMWQCC standard

Results from August 2015 sampling events represent conditions pre-system shutdown

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-5	2/23/2016	5,395.07	5,355.84	39.23	--	--	No	No	2.6	Clear
	3/22/2016	5,395.07	5,355.60	39.47	--	--	No	No	2.8	Clear
	4/21/2016	5,395.07	5,355.37	39.70	--	--	No	Yes	7.4	Clear
	5/26/2016	5,395.07	5,355.37	39.70	--	--	No	No	56.2	Clear
	6/27/2016	5,395.07	5,354.57	40.50	--	--	No	No	72.9	Clear
	7/25/2016	5,395.07	5,355.18	39.89	--	--	Yes	Yes	38.9	Clear
	8/25/2016	5,395.07	5,355.08	39.99	--	--	No	No	1.6	Clear
	9/26/2016	5,395.07	5,354.89	40.18	--	--	No	Yes	5.5	Clear
	10/17/2016	5,395.07	5,355.09	39.98	--	--	No	No	4.3	Clear
	11/30/2016	5,395.07	5,355.09	39.98	--	--	Yes	Yes	134	Clear, PSH droplets observed
	12/30/2016	5,395.07	5,354.91	40.16	40.15	0.01	Yes	Yes	798.8	PSH Observed

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-7	2/23/2016	5,395.85	5,357.56	38.29	38.17	0.12	Yes	Yes	2.8	Black on top with golden brown below (two distinct layers), PSH observed
	3/22/2016	5,395.85	5,356.33	39.52	39.28	0.24	Yes	Yes	219.0	Black PSH on top, brown below
	4/21/2016	5,396.85	5,356.55	40.30	39.95	0.35	Yes	Yes	248	Brown/black PSH observed
	5/26/2016	5,396.85	5,356.05	40.80	40.36	0.44	Yes	Yes	69.2	Brown/black PSH observed
	6/27/2016	5,396.85	5,355.50	41.35	40.98	0.37	Yes	Yes	84.3	Yellow, PSH observed
	7/25/2016	5,396.85	5,355.35	41.50	41.08	0.42	Yes	Yes	89.6	Yellow, PSH observed
	8/25/2016	5,396.85	5,355.15	41.70	41.29	0.41	Yes	Yes	104	Black on top with golden brown below (two distinct layers), PSH observed
	9/26/2016	5,396.85	5,355.00	41.85	41.55	0.30	Yes	Yes	103.5	Black on top with golden brown below (two distinct layers), PSH observed
	10/17/2016	5,396.85	5,355.27	41.58	41.40	0.18	Yes	Yes	95.9	PSH observed
	11/30/2016	5,396.85	5,355.26	41.59	41.36	0.23	Yes	Yes	219	Black on top with golden brown below (two distinct layers), PSH observed
	12/30/2016	5,396.85	5,355.24	41.61	41.45	0.16	Yes	Yes	740.0	Black on top with golden brown below (two distinct layers), PSH observed

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-8	2/23/2016	5,390.50	5,348.68	41.82	--	--	No	No	0.0	Light brown
	3/22/2016	5,390.50	5,348.78	41.72	--	--	No	No	0.0	Light brown
	4/21/2016	5,391.50	5,349.71	41.79	--	--	No	No	0.0	Clear
	5/26/2016	5,391.50	5,349.75	41.75	--	--	No	No	10.0	Clear
	6/27/2016	5,391.50	5,349.60	41.90	--	--	No	No	6.0	Clear
	7/25/2016	5,391.50	5,349.54	41.96	--	--	No	No	4.2	Clear
	8/25/2016	5,391.50	5,349.49	42.01	--	--	No	No	0.0	Clear
	9/26/2016	5,391.50	5,349.31	42.19	--	--	No	No	4.5	Dark grey/black
	10/17/2016	5,391.50	5,349.37	42.13	--	--	No	No	6.7	Dark grey
	11/30/2016	5,391.50	5,349.35	42.15	--	--	No	No	5.3	Clear with black/grey hue
	12/30/2016	5,391.50	5,349.52	41.98	--	--	No	No	4.4	Clear with black/grey hue

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-11	2/23/2016	5,389.43	5,348.45	40.98	--	--	No	No	0.0	Clear
	3/22/2016	5,389.43	5,348.51	40.92	--	--	No	No	0.0	Light brown
	4/21/2016	5,390.43	5,349.48	40.95	--	--	No	No	0.0	Clear
	5/26/2016	5,390.43	5,349.46	40.97	--	--	No	No	0.0	Light brown
	6/27/2016	5,390.43	5,349.26	41.17	--	--	No	No	0.0	Brown
	7/25/2016	5,390.43	5,349.33	41.10	--	--	No	No	0.0	Brown
	8/25/2016	5,390.43	5,349.29	41.14	--	--	No	No	0.0	Brown
	9/26/2016	5,390.43	5,349.13	41.30	--	--	No	No	0.0	Dark grey/ black
	10/17/2016	5,390.43	5,349.19	41.24	--	--	No	No	0.0	Black
	11/30/2016	5,390.43	5,349.10	41.33	--	--	No	No	0.0	Clear
	12/30/2016	5,390.43	5,349.39	41.04	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-13	2/23/2016	5,393.04	5,352.25	40.79	--	--	No	No	0.0	Pale brown
	3/22/2016	5,393.04	5,352.42	40.62	--	--	No	No	0.0	Clear
	4/21/2016	5,394.04	5,353.29	40.75	--	--	No	No	0.0	Clear
	5/26/2016	5,394.04	5,353.31	40.73	--	--	No	No	0.0	Clear
	6/27/2016	5,394.04	5,353.11	40.93	--	--	No	No	0.0	Clear
	7/25/2016	5,394.04	5,353.09	40.95	--	--	No	No	0.0	Clear
	8/25/2016	5,394.04	5,353.14	40.90	--	--	No	No	0.0	Clear
	9/26/2016	5,394.04	5,353.02	41.02	--	--	No	No	0.0	Clear
	10/17/2016	5,394.04	5,353.07	40.97	--	--	No	No	0.0	Clear
	11/30/2016	5,394.04	5,353.07	40.97	--	--	No	No	0.0	Clear
	12/30/2016	5,394.04	5,354.29	39.75	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-15	2/23/2016	5,397.99	5,364.04	33.95	--	--	No	No	0.0	Clear
	3/22/2016	5,397.99	5,364.29	33.70	--	--	No	No	0.0	Clear
	4/21/2016	5,398.99	5,365.10	33.89	--	--	No	No	0.0	Clear
	5/26/2016	5,398.99	5,365.07	33.92	--	--	No	No	0.0	Clear
	6/27/2016	5,398.99	5,364.83	34.16	--	--	No	No	0.0	Clear
	7/25/2016	5,398.99	5,364.87	34.12	--	--	No	No	0.0	Clear
	8/25/2016	5,398.99	5,365.03	33.96	--	--	No	No	0.0	Clear
	9/26/2016	5,398.99	5,364.83	34.16	--	--	No	No	0.0	Clear
	10/17/2016	5,398.99	5,365.05	33.94	--	--	No	No	0.0	Clear
	11/30/2016	5,398.99	5,365.03	33.96	--	--	No	No	0.0	Clear
	12/30/2016	5,398.99	5,365.29	33.70	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-20	2/23/2016	5,393.47	5,353.26	40.21	--	--	No	Yes	59.7	Clear, 4 droplets of PSH
	3/22/2016	5,393.47	5,353.16	40.31	--	--	No	Yes	161.2	Clear
	4/21/2016	5,394.47	5,354.02	40.45	--	--	No	No	191	Clear
	5/26/2016	5,394.47	5,353.99	40.48	--	--	No	Yes	209	Clear
	6/27/2016	5,394.47	5,353.94	40.53	--	--	No	Yes	86.1	Clear
	7/25/2016	5,394.47	5,353.71	40.76	--	--	No	Yes	106.4	Clear
	8/25/2016	5,394.47	5,353.73	40.74	--	--	No	No	126	Clear
	9/26/2016	5,394.47	5,353.42	41.05	--	--	Yes	Yes	288.6	Clear on top, black on bottom, PSH observed
	10/17/2016	5,394.47	5,353.56	40.91	--	--	Yes	Yes	325.7	Clear on top, black on bottom, PSH observed
	11/30/2016	5,394.47	5,353.45	41.02	--	--	No	Yes	245	Clear on top, black on bottom, PSH observed
	12/30/2016	5,394.47	5,353.68	40.79	40.77	0.02	Yes	Yes	278.2	PSH observed

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-21S	2/23/2016	5,400.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	3/22/2016	5,400.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	4/21/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	5/26/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	6/27/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	7/25/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	8/25/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	9/26/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	10/17/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	11/30/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry
	12/30/2016	5,401.65	DRY	DRY	--	--	NM	NM	0.0	Dry

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-21D	2/23/2016	5,400.19	5,364.14	36.05	--	--	No	No	9.6	Clear
	3/22/2016	5,400.19	5,364.16	36.03	--	--	No	No	8.7	Clear
	4/21/2016	5,401.19	5,365.09	36.10	--	--	No	No	0.0	Clear
	5/26/2016	5,402.19	5,366.14	36.05	--	--	No	No	0.0	Clear
	6/27/2016	5,402.19	5,365.94	36.25	--	--	No	No	0.0	Clear
	7/25/2016	5,402.19	5,366.08	36.11	--	--	No	No	0.0	Clear
	8/25/2016	5,402.19	5,366.09	36.10	--	--	No	No	0.0	Clear
	9/26/2016	5,402.19	5,365.95	36.24	--	--	No	No	0.0	Clear
	10/17/2016	5,402.19	5,366.19	36.00	--	--	No	No	0.0	Clear
	11/30/2016	5,402.19	5,366.23	35.96	--	--	No	No	0.0	Clear
	12/30/2016	5,402.19	5,366.20	35.99	--	--	No	No	8.6	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-22	2/23/2016	5395.91	5,360.18	35.73	--	-	No	Yes	0.0	Light brown
	3/22/2016	5395.91	5,360.47	35.44	--	-	No	Yes	0.0	Light gray
	4/21/2016	5396.91	5,361.25	35.66	--	-	Yes	Yes	0.0	Light brown
	5/26/2016	5396.91	5,361.26	35.65	--	-	Yes	Yes	0.0	Brown cloudy
	6/27/2016	5396.91	5,361.09	35.82	--	-	Yes	Yes	0.0	Brown
	7/25/2016	5396.91	5,360.26	36.65	--	-	Yes	Yes	0.0	Brown
	8/25/2016	5396.91	5,359.50	37.41	--	-	No	No	0.0	Brown
	9/26/2016	5396.91	5,360.95	35.96	--	-	Yes	Yes	0.3	Light brown, PSH observed
	10/17/2016	5396.91	5,361.01	35.90	--	-	No	No	0.0	Light brown
	11/30/2016	5396.91	5,361.08	35.83	--	-	No	No	0.0	Light brown
	12/30/2016	5396.91	5,359.82	37.09	--	-	No	No	0.6	Light brown

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-23	2/23/2016	5,404.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	3/22/2016	5,404.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	4/21/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	5/26/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	6/27/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	7/25/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	8/25/2016	5,405.72	5,369.82	35.90	35.87	0.03	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	9/26/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	10/17/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	11/30/2016	5,405.72	NM	NM	--	--	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation
	12/30/2016	5,405.72	34.55	34.53	0.62	0.02	NM	NM	0.0	Bent casing, unable to retrieve groundwater for observation

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-24S	2/23/2016	5,396.08	5,365.51	30.57	--	--	No	No	0.0	Clear
	3/22/2016	5,396.08	5,365.80	30.28	--	--	No	No	0.0	Light gray
	4/21/2016	5,397.08	5,366.78	30.30	--	--	No	No	0.0	Clear
	5/26/2016	5,397.08	5,366.96	30.12	--	--	No	No	0.0	Clear
	6/27/2016	5,397.08	5,366.63	30.45	--	--	No	No	0.0	Clear
	7/25/2016	5,397.08	5,365.73	31.35	--	--	No	No	0.0	Clear
	8/25/2016	5,397.08	5,366.81	30.27	--	--	No	No	0.0	Clear
	9/26/2016	5,397.08	5,366.63	30.45	--	--	No	No	0.0	Clear
	10/17/2016	5,397.08	5,366.81	30.27	--	--	No	No	0.0	Clear
	11/30/2016	5,397.08	5,366.79	30.29	--	--	No	No	0.0	Clear
	12/30/2016	5,397.08	5,367.04	30.04	--	--	No	No	0.0	Clear

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VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-24D	2/23/2016	5,397.46	5,365.95	31.51	--	--	No	No	0.0	Clear
	3/22/2016	5,397.46	5,366.15	31.31	--	--	No	No	0.0	Clear
	4/21/2016	5,398.46	5,367.23	31.23	--	--	No	No	0.1	Clear
	5/26/2016	5,398.46	5,367.41	31.05	--	--	No	No	0.0	Clear
	6/27/2016	5,398.46	5,367.18	31.28	--	--	No	No	0.0	Clear
	7/25/2016	5,398.46	5,367.06	31.40	--	--	No	No	0.0	Clear
	8/25/2016	5,398.46	5,367.14	31.32	--	--	No	No	0.0	Clear
	9/26/2016	5,398.46	5,367.02	31.44	--	--	No	No	0.0	Clear
	10/17/2016	5,398.46	5,367.18	31.28	--	--	No	No	0.0	Clear
	11/30/2016	5,398.46	5,367.21	31.25	--	--	No	No	0.0	Clear
	12/30/2016	5,398.46	5,367.41	31.05	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-25	2/23/2016	5,397.03	5,362.43	34.60	--	--	Yes	Yes	36.3	Brown, some PSH observed
	3/22/2016	5,397.03	5,362.60	34.43	--	--	Yes	Yes	42.7	Dark gray
	4/21/2016	5,398.03	5,363.53	34.50	--	--	No	Yes	101	Light brown
	5/26/2016	5,398.03	5,363.55	34.48	--	--	No	No	25.6	Light brown
	6/27/2016	5,398.03	5,363.02	35.01	--	--	No	No	55.6	Brown
	7/25/2016	5,398.03	5,363.23	34.80	--	--	No	No	32.6	Brown
	8/25/2016	5,398.03	5,363.46	34.57	--	--	No	No	20.0	Brown
	9/26/2016	5,398.03	5,363.39	34.64	--	--	No	Yes	25.0	Light brown
	10/17/2016	5,398.03	5,363.56	34.47	--	--	Yes	Yes	0.0	Brown
	11/30/2016	5,398.03	5,363.53	34.50	--	--	No	Yes	0.0	Light grey
	12/30/2016	5,398.03	5,363.57	34.46	--	--	No	Yes	4.6	Light grey

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-26	2/23/2016	5,396.72	5,364.76	31.96	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	3/22/2016	5,396.72	5,364.81	31.91	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	4/21/2016	5,397.72	5,363.97	33.75	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	5/26/2016	5,397.72	5,365.59	32.13	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	6/27/2016	5,397.72	5,364.47	33.25	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	7/25/2016	5,397.72	5,364.27	33.45	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	8/25/2016	5,397.72	5,364.31	33.41	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	9/26/2016	5,397.72	5,365.39	32.33	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	10/17/2016	5,397.72	5,365.53	32.19	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	11/30/2016	5,397.72	5,365.52	32.20	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation
	12/30/2016	5,397.72	5,365.62	32.10	--	--	--	--	0.0	Bent casing unable to retrieve groundwater for observation

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-30	2/23/2016	5,395.59	5,363.04	32.55	--	--	No	No	0.0	Clear
	3/22/2016	5,395.59	5,363.15	32.44	--	--	No	No	0.0	Clear
	4/21/2016	5,396.59	5,364.09	32.50	--	--	No	No	0.0	Clear
	5/26/2016	5,396.59	5,364.11	32.48	--	--	No	No	0.0	Clear
	6/27/2016	5,396.59	5,363.94	32.65	--	--	No	No	0.0	Clear
	7/25/2016	5,396.59	5,363.94	32.65	--	--	No	No	0.0	Clear
	8/25/2016	5,396.59	5,363.93	32.66	--	--	No	No	0.0	Clear
	9/26/2016	5,396.59	5,363.81	32.78	--	--	No	No	0.0	Clear
	10/17/2016	5,396.59	5,363.94	32.65	--	--	No	No	0.0	Clear
	11/30/2016	5,396.59	5,363.99	32.60	--	--	No	No	0.0	Clear
	12/30/2016	5,396.59	5,364.10	32.49	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-31	2/23/2016	5,396.58	5,364.00	32.58	--	--	No	No	0.0	Clear
	3/22/2016	5,396.58	5,361.81	34.77	--	--	No	No	0.0	Clear
	4/21/2016	5,397.58	5,365.01	32.57	--	--	No	No	0.0	Clear
	5/26/2016	5,397.58	5,364.98	32.60	--	--	No	No	0.0	Clear
	6/27/2016	5,397.58	5,364.78	32.80	--	--	No	No	0.0	Clear
	7/25/2016	5,397.58	5,364.88	32.70	--	--	No	No	0.0	Clear
	8/25/2016	5,397.58	5,362.61	34.97	--	--	No	No	0.0	Clear
	9/26/2016	5,397.58	5,364.81	32.77	--	--	No	No	0.0	Clear
	10/17/2016	5,397.58	5,364.89	32.69	--	--	No	No	0.0	Clear
	11/30/2016	5,397.58	5,364.90	32.68	--	--	No	No	0.0	Clear
	12/30/2016	5,397.58	5,365.09	32.49	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-33	2/23/2016	5,396.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	3/22/2016	5,396.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	4/21/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	5/26/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	6/27/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	7/25/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	8/25/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	9/26/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	10/17/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	11/30/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry
	12/30/2016	5,397.28	DRY	DRY	--	--	NM	NM	0.0	Dry

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-34	2/23/2016	5,394.00	5,359.80	34.20	--	--	No	No	0.0	Dark grey
	3/22/2016	5,394.00	5,360.01	33.99	--	--	No	No	0.0	Dark brown
	4/21/2016	5,395.00	5,360.87	34.13	--	--	Yes	Yes	0.0	Light Brown, PSH observed
	5/26/2016	5,395.00	5,360.92	34.08	34.07	0.01	Yes	Yes	0.0	Light Brown, PSH observed
	6/27/2016	5,395.00	5,360.78	34.22	--	--	Yes	Yes	0.0	Gray, PSH observed
	7/25/2016	5,395.00	5,360.75	34.25	--	--	Yes	Yes	0.0	Gray, PSH observed
	8/25/2016	5,395.00	5,360.70	34.30	--	--	Yes	Yes	0.0	Light Brown
	9/26/2016	5,395.00	5,360.59	34.41	--	--	Yes	Yes	0.0	Light Brown
	10/17/2016	5,395.00	5,360.72	34.28	--	--	No	No	0.0	Clear
	11/30/2016	5,395.00	5,360.72	34.28	--	--	Yes	Yes	0.0	Grey PSH observed
	12/30/2016	5,395.00	5,360.98	34.02	--	--	Yes	Yes	0.2	Light Brown

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-35	2/23/2016	5,393.66	5,359.36	34.30	--	--	No	No	0.0	Brown
	3/22/2016	5,393.66	5,359.55	34.11	--	--	No	No	0.0	Light brown
	4/21/2016	5,394.66	5,360.43	34.23	--	--	No	No	2.1	Clear
	5/26/2016	5,394.66	5,360.46	34.20	--	--	No	No	0.0	Light brown
	6/27/2016	5,394.66	5,360.33	34.33	--	--	No	No	0.0	Brown
	7/25/2016	5,394.66	5,360.31	34.35	--	--	No	No	0.0	Brown
	8/25/2016	5,394.66	5,360.25	34.41	--	--	No	No	0.0	Clear
	9/26/2016	5,394.66	5,360.06	34.60	--	--	No	No	0.0	Clear
	10/17/2016	5,394.66	5,360.26	34.40	--	--	No	No	0.0	Clear
	11/30/2016	5,394.66	5,360.24	34.42	--	--	No	No	0.0	Clear
	12/30/2016	5,394.66	5,360.47	34.19	--	--	No	No	0.8	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-39	2/23/2016	5,397.55	5,363.99	33.56	--	--	No	No	0.0	Clear
	3/22/2016	5,397.55	5,364.09	33.46	--	--	No	No	0.0	Clear
	4/21/2016	5,398.55	5,365.02	33.53	--	--	No	No	2.4	Clear
	5/26/2016	5,398.55	5,365.03	33.52	--	--	No	No	0.0	Clear
	6/27/2016	5,398.55	5,364.70	33.85	--	--	No	No	0.0	Clear
	7/25/2016	5,398.55	5,364.63	33.92	--	--	No	No	0.0	Clear
	8/25/2016	5,398.55	5,364.88	33.67	--	--	No	No	0.0	Clear
	9/26/2016	5,398.55	5,364.80	33.75	--	--	No	No	0.0	Clear
	10/17/2016	5,398.55	5,364.95	33.60	--	--	No	No	0.0	Clear
	11/30/2016	5,398.55	5,364.97	33.58	--	--	No	No	0.0	Clear
	12/30/2016	5,398.55	5,365.09	33.46	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-40	2/23/2016	5,400.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	3/22/2016	5,400.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	4/21/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	5/26/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	6/27/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	7/25/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	8/25/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	9/26/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	10/17/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	11/30/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry
	12/30/2016	5,401.76	DRY	DRY	--	--	NM	NM	0.0	Dry

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GBR-41	2/23/2016	5,396.35	5,362.11	34.24	34.16	0.08	Yes	Yes	141	No water recovered but bailer stained light brown
	3/22/2016	5,396.35	5,362.12	34.23	34.16	0.07	Yes	Yes	357.2	No water recovered, strong smell on bailer, and bailer yellow
	4/21/2016	5,397.35	--	DRY	--	--	NM	NM	341	Dry
	5/26/2016	5,397.35	--	DRY	--	--	NM	NM	85.3	Dry
	6/27/2016	5,397.35	--	DRY	--	--	NM	NM	105.3	Dry
	7/25/2016	5,397.35	--	DRY	--	--	NM	NM	44.5	Dry
	8/25/2016	5,397.35	--	DRY	--	--	NM	NM	181	Dry
	9/26/2016	5,397.35	5,363.06	34.29	34.19	0.10	NM	NM	82.7	Golden brown, PSH observed on probe
	10/17/2016	5,397.35	5,363.06	34.29	34.27	0.02	NM	NM	82.7	PSH observed on probe
	11/30/2016	5,397.35	5,363.06	34.29	34.21	0.08	NM	NM	94.5	No water recovered bailer stained with PSH
	12/30/2016	5,397.35	5,363.10	34.25	34.22	0.03	NM	NM	563.8	No water recovered bailer stained with PSH

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-1	2/23/2016	5,394.30	5,352.45	41.85	--	--	No	No	0.0	Clear
	3/22/2016	5,394.30	5,352.37	41.93	--	--	No	No	0.0	Clear
	4/21/2016	5,395.30	5,353.19	42.11	--	--	No	No	0.0	Clear
	5/26/2016	5,395.30	5,353.12	42.18	--	--	No	No	0.0	Clear
	6/27/2016	5,395.30	5,353.01	42.29	--	--	No	No	0.0	Clear
	7/25/2016	5,395.30	5,352.92	42.38	--	--	No	No	0.0	Clear
	8/25/2016	5,395.30	5,352.05	43.25	--	--	No	No	0.0	Clear
	9/26/2016	5,395.30	5,351.60	43.70	--	--	No	No	0.0	Clear
	10/17/2016	5,395.30	5,351.79	43.51	--	--	No	No	0.0	Clear
	11/30/2016	5,395.30	5,351.50	43.80	--	--	No	No	0.0	Clear
	12/30/2016	5,395.30	5,351.85	43.45	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-2	2/23/2016	5,391.28	5,348.11	43.17	--	--	No	No	0.0	Light brown
	3/22/2016	5,391.28	5,348.12	43.16	--	--	No	No	0.0	Light brown
	4/21/2016	5,392.28	5,349.03	43.25	--	--	No	No	0.0	Clear
	5/26/2016	5,392.28	5,349.00	43.28	--	--	No	No	0.0	Clear
	6/27/2016	5,392.28	5,348.71	43.57	--	--	No	No	0.0	Clear
	7/25/2016	5,392.28	5,348.78	43.50	--	--	No	No	0.0	Clear
	8/25/2016	5,392.28	5,348.72	43.56	--	--	No	No	0.0	Clear
	9/26/2016	5,392.28	5,348.53	43.75	--	--	No	No	0.0	Clear
	10/17/2016	5,392.28	5,348.50	43.78	--	--	No	No	0.0	Clear
	11/30/2016	5,392.28	5,348.45	43.83	--	--	No	No	0.0	Clear
	12/30/2016	5,392.28	5,348.65	43.63	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-3	2/23/2016	5,388.77	5,345.75	43.02	--	--	No	No	0.0	Clear
	3/22/2016	5,388.77	5,346.01	42.76	--	--	No	No	0.0	Clear, white debris on bailer
	4/21/2016	5,389.77	5,346.82	42.95	--	--	No	No	0.0	Clear, white debris on bailer
	5/26/2016	5,390.77	5,347.87	42.90	--	--	No	No	0.0	Clear, white debris on bailer
	6/27/2016	5,390.77	5,347.37	43.40	--	--	No	No	0.0	Clear, white debris on bailer
	7/25/2016	5,390.77	5,347.66	43.11	--	--	No	No	0.0	Clear, white debris on bailer
	8/25/2016	5,390.77	5,347.23	43.54	--	--	No	No	0.0	Clear, white debris on bailer
	9/26/2016	5,390.77	5,346.90	43.87	--	--	Yes	Yes	0.0	Mostly clear, white debris stuck on bailer, PSH droplets observed
	10/17/2016	5,390.77	5,346.99	43.78	--	--	Yes	Yes	0.0	Mostly clear, white debris stuck on bailer, PSH droplets observed
	11/30/2016	5,390.77	5,347.23	43.54	--	--	Yes	Yes	0.0	Mostly clear, white debris stuck on bailer, PSH droplets observed
	12/30/2016	5,390.77	5,347.61	43.16	--	--	Yes	Yes	0.0	Mostly clear, white debris stuck on bailer, PSH droplets observed

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-4	2/23/2016	5,390.02	5,348.18	41.84	--	--	Yes	Yes	0.0	Dark grey, some PSH observed
	3/22/2016	5,390.02	5,348.28	41.74	--	--	No	No	0.0	Light gray
	4/21/2016	5,391.02	5,349.20	41.82	--	--	No	No	0.0	Clear
	5/26/2016	5,391.02	5,349.22	41.80	--	--	No	No	0.0	Clear
	6/27/2016	5,391.02	5,348.96	42.06	--	--	No	No	0.0	Clear
	7/25/2016	5,391.02	5,349.03	41.99	--	--	No	No	0.0	Clear
	8/25/2016	5,391.02	5,349.00	42.02	--	--	No	No	0.0	Clear
	9/26/2016	5,391.02	5,348.84	42.18	--	--	No	No	0.0	Clear
	10/17/2016	5,391.02	5,348.91	42.11	--	--	No	No	0.0	Clear
	11/30/2016	5,391.02	5,348.90	42.12	--	--	No	No	0.0	Clear
	12/30/2016	5,391.02	5,349.07	41.95	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-5	2/23/2016	5,391.56	5,349.48	42.08	--	--	No	No	0.0	Clear
	3/22/2016	5,391.56	5,349.63	41.93	--	--	No	No	0.0	Clear
	4/21/2016	5,392.56	5,350.56	42.00	--	--	No	No	0.0	Clear
	5/26/2016	5,392.56	5,350.56	42.00	--	--	No	No	0.0	Clear
	6/27/2016	5,392.56	5,350.20	42.36	--	--	No	No	0.0	Clear
	7/25/2016	5,392.56	5,350.44	42.12	--	--	No	No	0.0	Clear
	8/25/2016	5,392.56	5,350.36	42.20	--	--	No	No	0.0	Clear
	9/26/2016	5,392.56	5,350.21	42.35	--	--	No	No	0.0	Clear
	10/17/2016	5,392.56	5,350.28	42.28	--	--	No	No	0.0	Clear
	11/30/2016	5,392.56	5,351.27	41.29	--	--	No	No	0.0	Clear
	12/30/2016	5,392.56	5,350.50	42.06	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-6	2/23/2016	5,391.81	5,350.57	41.24	--	--	No	No	0.0	clear
	3/22/2016	5,391.81	5,350.73	41.08	--	--	No	No	0.0	Clear
	4/21/2016	5,392.81	5,351.66	41.15	--	--	No	No	0.0	Clear
	5/26/2016	5,392.81	5,351.68	41.13	--	--	No	No	0.0	Clear
	6/27/2016	5,392.81	5,351.59	41.22	--	--	No	No	0.0	Clear
	7/25/2016	5,392.81	5,351.58	41.23	--	--	No	No	0.0	Clear
	8/25/2016	5,392.81	5,351.43	41.38	--	--	No	No	0.0	Clear
	9/26/2016	5,392.81	5,351.33	41.48	--	--	No	No	0.0	Clear
	10/17/2016	5,392.81	5,351.38	41.43	--	--	No	No	0.0	Clear
	11/30/2016	5,392.81	5,351.43	41.38	--	--	No	No	0.0	Clear
	12/30/2016	5,392.81	5,351.60	41.21	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-9	2/23/2016	5,395.70	5,355.73	39.97	--	--	No	No	0.7	Clear
	3/22/2016	5,395.70	5,355.65	40.05	--	--	No	No	0.9	Clear
	4/21/2016	5,396.70	5,356.30	40.40	--	--	No	No	1.0	Clear
	5/26/2016	5,396.70	5,356.35	40.35	--	--	No	Yes	0.0	Clear
	6/27/2016	5,396.70	5,355.92	40.78	--	--	No	Yes	0.0	Clear
	7/25/2016	5,396.70	5,356.30	40.40	--	--	No	Yes	0.0	Clear
	8/25/2016	5,396.70	5,355.98	40.72	--	--	No	Yes	0.0	Clear
	9/26/2016	5,396.70	5,355.74	40.96	--	--	No	Yes	0.0	Clear
	10/17/2016	5,396.70	5,355.99	40.71	--	--	No	Yes	0.0	Clear
	11/30/2016	5,396.70	5,355.85	40.85	--	--	No	Yes	0.0	Clear
	12/30/2016	5,396.70	5,355.95	40.75	--	--	No	No	190.4	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-10	2/23/2016	5,395.02	5,358.97	36.05	--	--	No	No	0.0	Light brown
	3/22/2016	5,395.02	5,359.13	35.89	--	--	No	No	0.0	Clear
	4/21/2016	5,396.02	5,360.10	35.92	--	--	No	No	0.0	Clear
	5/26/2016	5,396.02	5,360.12	35.90	--	--	No	No	0.0	Clear
	6/27/2016	5,396.02	5,359.68	36.34	--	--	No	No	0.0	Clear
	7/25/2016	5,396.02	5,359.86	36.16	--	--	No	No	0.0	Clear
	8/25/2016	5,396.02	5,359.87	36.15	--	--	No	No	0.0	Clear
	9/26/2016	5,396.02	5,359.77	36.25	--	--	No	No	0.0	Clear
	10/17/2016	5,396.02	5,359.92	36.10	--	--	No	No	0.0	Clear
	11/30/2016	5,396.02	5,359.92	36.10	--	--	No	No	0.0	Clear
	12/30/2016	5,396.02	5,360.09	35.93	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-11	2/23/2016	5,397.85	5,365.09	32.76	--	--	No	No	0.0	Clear
	3/22/2016	5,397.85	5,365.16	32.69	--	--	No	No	0.0	Clear
	4/21/2016	5,398.85	5,366.00	32.85	--	--	No	No	0.0	Clear
	5/26/2016	5,398.85	5,366.07	32.78	--	--	No	No	0.0	Clear
	6/27/2016	5,398.85	5,365.77	33.08	--	--	No	No	0.0	Clear
	7/25/2016	5,398.85	5,366.03	32.82	--	--	No	No	0.0	Clear
	8/25/2016	5,398.85	5,365.83	33.02	--	--	No	No	0.0	Clear
	9/26/2016	5,398.85	5,365.62	33.23	--	--	No	No	0.0	Clear
	10/17/2016	5,398.85	5,366.60	32.25	--	--	No	No	0.0	Clear
	11/30/2016	5,398.85	5,365.93	32.92	--	--	No	No	0.0	Clear
	12/30/2016	5,398.85	5,366.00	32.85	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-12	2/23/2016	5,397.24	5,362.57	34.67	--	--	No	No	0.0	Light brown
	3/22/2016	5,397.24	5,362.33	34.91	--	--	No	No	0.0	Yellow
	4/21/2016	5,398.24	5,363.62	34.62	--	--	No	No	5.1	Clear
	5/26/2016	5,398.24	5,363.30	34.94	--	--	No	No	0.0	Light brown
	6/27/2016	5,398.24	5,362.78	35.46	--	--	No	No	0.0	Clear
	7/25/2016	5,398.24	5,362.99	35.25	--	--	No	No	0.0	Clear
	8/25/2016	5,399.24	5,364.95	34.29	--	--	No	No	0.0	Clear
	9/26/2016	5,399.24	5,364.36	34.88	--	--	No	No	0.0	Clear
	10/17/2016	5,399.24	5,364.43	34.81	--	--	No	No	0.0	Clear
	11/30/2016	5,399.24	5,364.10	35.14	--	--	No	No	0.0	Clear
	12/30/2016	5,399.24	5,364.66	34.58	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
GRW-13	2/23/2016	5,396.90	5,363.82	33.08	--	--	No	No	0.0	Clear
	3/22/2016	5,396.90	5,363.92	32.98	--	--	No	No	0.0	Clear
	4/21/2016	5,397.90	5,364.85	33.05	--	--	No	No	0.0	Clear
	5/26/2016	5,397.90	5,364.86	33.04	--	--	No	No	0.0	Clear
	6/27/2016	5,397.90	5,364.45	33.45	--	--	No	No	0.0	Clear
	7/25/2016	5,397.90	5,364.54	33.36	--	--	No	No	0.0	Clear
	8/25/2016	5,397.90	5,364.72	33.18	--	--	No	No	0.0	Clear
	9/26/2016	5,397.90	5,364.60	33.30	--	--	No	No	0.0	Clear
	10/17/2016	5,397.90	5,364.77	33.13	--	--	No	No	0.0	Clear
	11/30/2016	5,397.90	5,364.77	33.13	--	--	No	No	0.0	Clear
	12/30/2016	5,397.90	5,364.92	32.98	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-1	2/23/2016	5,383.54	5,345.20	38.34	--	--	No	No	0.0	Clear
	3/22/2016	5,383.54	5,345.28	38.26	--	--	No	No	0.0	Clear
	4/21/2016	5,384.54	5,346.24	38.30	--	--	No	No	0.0	Clear
	5/26/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	6/27/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	7/25/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	8/25/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	9/26/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	10/17/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	11/30/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried
	12/30/2016	5,384.54	--	NM	--	--	NM	NM	0.0	Well has been buried

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-2	2/23/2016	5,381.66	5,341.43	40.23	--	--	No	No	0.0	Light brown
	3/22/2016	5,381.66	5,341.47	40.19	--	--	No	Yes	0.0	Yellow
	4/21/2016	5,382.66	5,342.39	40.27	--	--	No	No	0.0	Clear
	5/26/2016	5,382.66	5,342.38	40.28	--	--	No	No	0.0	Slight brown tint
	6/27/2016	5,382.66	5,342.38	40.28	--	--	No	No	0.0	Clear
	7/25/2016	5,382.66	5,342.13	40.53	--	--	No	No	0.0	Clear
	8/25/2016	5,382.66	5,342.11	40.55	--	--	No	No	0.0	Clear
	9/26/2016	5,382.66	5,342.02	40.64	--	--	No	No	0.0	Clear
	10/17/2016	5,382.66	5,342.06	40.60	--	--	No	No	0.0	Clear
	11/30/2016	5,382.66	5,342.06	40.60	--	--	No	No	0.0	Clear
	12/30/2016	5,382.66	5,342.17	40.49	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-5	2/23/2016	5,378.36	5,340.38	37.98	--	--	No	No	0.0	Clear
	3/22/2016	5,378.36	5,340.45	37.91	--	--	No	No	0.0	Clear
	4/21/2016	5,379.36	5,341.44	37.92	--	--	No	No	0.0	Clear
	5/26/2016	5,379.36	5,341.44	37.92	--	--	No	No	0.0	Clear
	6/27/2016	5,379.36	5,341.15	38.21	--	--	No	No	0.0	Clear
	7/25/2016	5,379.36	5,341.48	37.88	--	--	No	No	0.0	Clear
	8/25/2016	5,379.36	5,341.09	38.27	--	--	No	No	0.0	Clear
	9/26/2016	5,379.36	5,340.91	38.45	--	--	No	No	0.0	Clear
	10/17/2016	5,379.36	5,341.01	38.35	--	--	No	No	0.0	Clear
	11/30/2016	5,379.36	5,341.09	38.27	--	--	No	No	0.0	Clear
	12/30/2016	5,379.36	5,341.24	38.12	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-6	2/23/2016	5,378.36	5,340.55	37.81	--	--	No	No	0.0	Clear
	3/22/2016	5,378.36	5,340.64	37.72	--	--	No	No	0.0	Clear
	4/21/2016	5,379.36	5,341.57	37.79	--	--	No	No	0.0	Clear
	5/26/2016	5,379.36	5,341.54	37.82	--	--	No	No	0.0	Clear
	6/27/2016	5,379.36	5,341.35	38.01	--	--	No	No	0.0	Clear
	7/25/2016	5,379.36	5,342.19	37.17	--	--	No	No	0.0	Clear
	8/25/2016	5,379.36	5,341.23	38.13	--	--	No	No	0.0	Clear
	9/26/2016	5,379.36	5,341.10	38.26	--	--	No	No	0.0	Clear
	10/17/2016	5,379.36	5,341.22	38.14	--	--	No	No	0.0	Clear
	11/30/2016	5,379.36	5,341.32	38.04	--	--	No	No	0.0	Clear
	12/30/2016	5,379.36	5,341.42	37.94	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-8	2/23/2016	5,380.25	5,342.04	38.21	--	--	No	Yes	0.2	Clear
	3/22/2016	5,380.25	5,342.14	38.11	--	--	No	Yes	0.2	Clear
	4/21/2016	5,381.25	5,343.05	38.20	--	--	No	No	0.0	Clear
	5/26/2016	5,381.25	5,343.05	38.20	--	--	No	No	0.0	Clear
	6/27/2016	5,381.25	5,342.72	38.53	--	--	No	No	0.0	Clear
	7/25/2016	5,381.25	5,342.76	38.49	--	--	No	No	0.0	Clear
	8/25/2016	5,381.25	5,342.67	38.58	--	--	No	No	0.0	Clear
	9/26/2016	5,381.25	5,342.55	38.70	--	--	No	No	0.0	Light brown
	10/17/2016	5,381.25	5,342.77	38.48	--	--	No	No	0.0	Light brown
	11/30/2016	5,381.25	5,342.76	38.49	--	--	No	No	0.0	Clear
	12/30/2016	5,381.25	5,342.88	38.37	--	--	No	No	0.0	Clear

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-9	2/23/2016	5,380.79	5,343.13	37.66	--	--	No	No	0.1	Clear
	3/22/2016	5,380.79	5,343.42	37.37	--	--	No	No	0.1	Clear
	4/21/2016	5,381.79	5,344.36	37.43	--	--	No	No	0.9	Clear
	5/26/2016	5,381.79	5,344.32	37.47	--	--	No	No	0.0	Clear
	6/27/2016	5,381.79	5,344.10	37.69	--	--	No	No	0.0	Clear
	7/25/2016	5,381.79	--	NM	--	--	NM	NM	0.0	Obstruction in well
	8/25/2016	5,381.79	--	NM	--	--	NM	NM	0.0	Obstruction in well
	9/26/2016	5,381.79	--	NM	--	--	NM	NM	0.0	Obstruction in well
	10/17/2016	5,381.79	--	NM	--	--	NM	NM	0.0	Obstruction in well
	11/30/2016	5,381.79	--	NM	--	--	NM	NM	0.0	Obstruction in well
	12/30/2016	5,381.79	5,344.18	37.61	--	--	NM	NM	0.0	Obstruction in well

TABLE 5
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS - MONTHLY GROUNDWATER OBSERVATIONS

FORMER GIANT BLOOMFIELD REFINERY
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

Groundwater Monitoring Wells	Date	Top of Casing Elevation	Adjusted Groundwater Elevation	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Sheen	Hydrocarbon Odor	Headspace (ppm)	Comments
SHS-19	2/23/2016	5,378.89	5,341.13	37.76	--	--	No	No	0.0	Clear
	3/22/2016	5,378.89	5,341.22	37.67	--	--	No	No	0.0	Clear
	4/21/2016	5,378.89	5,341.19	37.70	--	--	No	No	0.0	Clear
	5/26/2016	5,378.89	5,341.19	37.70	--	--	No	No	0.0	Clear
	6/27/2016	5,378.89	5,340.74	38.15	--	--	No	No	0.0	Clear
	7/25/2016	5,378.89	5,341.04	37.85	--	--	No	No	0.0	Clear
	8/25/2016	5,378.89	5,340.84	38.05	--	--	No	No	0.0	Clear
	9/26/2016	5,378.89	5,340.84	38.05	--	--	No	No	0	Clear
	10/17/2016	5,378.89	5,340.87	38.02	--	--	No	No	0	Clear
	11/30/2016	5,378.89	5,340.87	38.02	--	--	No	No	0	Clear
	12/30/2016	5,378.89	5,341.00	37.89	--	--	No	No	0	Clear

NOTES:
 -- - not applicable
 BTOC - below top of casing
 NM - not measured
 ppm - parts per million
 PSH - phase-separated hydrocarbons





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 31, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: GBR Annual Sampling

OrderNo.: 1701600

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 5 sample(s) on 1/14/2017 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GRW-3

Project: GBR Annual Sampling

Collection Date: 1/13/2017 4:00:00 PM

Lab ID: 1701600-001

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO ₃)	850	6.6		mg/L	1	1/27/2017	R40343
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.50		mg/L	5	1/23/2017 6:06:07 PM	R40231
Chloride	74	2.5		mg/L	5	1/23/2017 6:06:07 PM	R40231
Bromide	0.54	0.50		mg/L	5	1/23/2017 6:06:07 PM	R40231
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	1/23/2017 6:06:07 PM	R40231
Sulfate	1200	25	*	mg/L	50	1/24/2017 7:29:20 PM	R40255
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/23/2017 8:10:12 PM	R40231
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3500	1.0		µmhos/cm	1	1/16/2017 6:41:19 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	758.3	20.00		mg/L CaCO ₃	1	1/16/2017 6:41:19 PM	R40056
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/16/2017 6:41:19 PM	R40056
Total Alkalinity (as CaCO ₃)	758.3	20.00		mg/L CaCO ₃	1	1/16/2017 6:41:19 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2730	200	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.39	1.68	H	pH units	1	1/16/2017 6:41:19 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Calcium	250	5.0		mg/L	5	1/27/2017 11:31:14 AM	29915
Iron	150	10	*	mg/L	500	1/30/2017 3:13:47 PM	29915
Magnesium	58	1.0		mg/L	1	1/27/2017 11:29:30 AM	29915
Manganese	2.9	0.010	*	mg/L	5	1/27/2017 11:31:14 AM	29915
Potassium	1.4	1.0		mg/L	1	1/27/2017 11:29:30 AM	29915
Sodium	550	10		mg/L	10	1/30/2017 3:12:02 PM	29915
EPA METHOD 8270C: PAHS							Analyst: DAM
Naphthalene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
1-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
2-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Acenaphthylene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Acenaphthene	0.72	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Fluorene	3.4	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Phenanthrene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Anthracene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Pyrene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GRW-3

Project: GBR Annual Sampling

Collection Date: 1/13/2017 4:00:00 PM

Lab ID: 1701600-001

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: PAHS							Analyst: DAM
Benz(a)anthracene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Chrysene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Benzo(b)fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Benzo(k)fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Benzo(a)pyrene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Dibenz(a,h)anthracene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Benzo(g,h,i)perylene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Indeno(1,2,3-cd)pyrene	ND	0.50		µg/L	1	1/19/2017 3:10:08 PM	29754
Surr: N-hexadecane	54.2	15-176		%Rec	1	1/19/2017 3:10:08 PM	29754
Surr: Benzo(e)pyrene	54.7	15-198		%Rec	1	1/19/2017 3:10:08 PM	29754
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Toluene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Ethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Naphthalene	ND	2.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
2-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Acetone	ND	10		µg/L	1	1/17/2017 3:09:00 AM	B40048
Bromobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Bromodichloromethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Bromoform	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Bromomethane	ND	3.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
2-Butanone	ND	10		µg/L	1	1/17/2017 3:09:00 AM	B40048
Carbon disulfide	ND	10		µg/L	1	1/17/2017 3:09:00 AM	B40048
Carbon Tetrachloride	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Chlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Chloroethane	ND	2.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Chloroform	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Chloromethane	ND	3.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
2-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
4-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
cis-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/17/2017 3:09:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GRW-3

Project: GBR Annual Sampling

Collection Date: 1/13/2017 4:00:00 PM

Lab ID: 1701600-001

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Dibromochloromethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Dibromomethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1-Dichloroethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1-Dichloroethene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,3-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
2,2-Dichloropropane	ND	2.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Hexachlorobutadiene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
2-Hexanone	ND	10		µg/L	1	1/17/2017 3:09:00 AM	B40048
Isopropylbenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
4-Isopropyltoluene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
4-Methyl-2-pentanone	ND	10		µg/L	1	1/17/2017 3:09:00 AM	B40048
Methylene Chloride	ND	3.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
n-Butylbenzene	ND	3.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
n-Propylbenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
sec-Butylbenzene	1.1	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Styrene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
tert-Butylbenzene	2.7	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
trans-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Trichlorofluoromethane	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Vinyl chloride	ND	1.0		µg/L	1	1/17/2017 3:09:00 AM	B40048
Xylenes, Total	ND	1.5		µg/L	1	1/17/2017 3:09:00 AM	B40048
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%Rec	1	1/17/2017 3:09:00 AM	B40048
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	1/17/2017 3:09:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GRW-3**Project:** GBR Annual Sampling**Collection Date:** 1/13/2017 4:00:00 PM**Lab ID:** 1701600-001**Matrix:** AQUEOUS**Received Date:** 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Surr: Dibromofluoromethane	94.5	70-130		%Rec	1	1/17/2017 3:09:00 AM	B40048
Surr: Toluene-d8	96.2	70-130		%Rec	1	1/17/2017 3:09:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-24D

Project: GBR Annual Sampling

Collection Date: 1/13/2017 12:45:00 PM

Lab ID: 1701600-002

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO ₃)	1300	6.6		mg/L	1	1/27/2017	R40343
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	1.6	0.10		mg/L	1	1/23/2017 6:30:56 PM	R40231
Chloride	130	10		mg/L	20	1/23/2017 6:43:20 PM	R40231
Bromide	0.61	0.10		mg/L	1	1/23/2017 6:30:56 PM	R40231
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	1/23/2017 6:43:20 PM	R40231
Sulfate	1900	50	*	mg/L	100	1/24/2017 7:41:45 PM	R40255
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/23/2017 8:22:36 PM	R40231
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4000	1.0		µmhos/cm	1	1/16/2017 7:09:18 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	242.1	20.00		mg/L CaCO ₃	1	1/16/2017 7:09:18 PM	R40056
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/16/2017 7:09:18 PM	R40056
Total Alkalinity (as CaCO ₃)	242.1	20.00		mg/L CaCO ₃	1	1/16/2017 7:09:18 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3390	200	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.62	1.68	H	pH units	1	1/16/2017 7:09:18 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Calcium	430	5.0		mg/L	5	1/27/2017 11:34:43 AM	29915
Iron	14	1.0	*	mg/L	50	1/30/2017 3:26:49 PM	29915
Magnesium	41	1.0		mg/L	1	1/27/2017 11:33:03 AM	29915
Manganese	1.8	0.010	*	mg/L	5	1/27/2017 11:34:43 AM	29915
Potassium	9.9	1.0		mg/L	1	1/27/2017 11:33:03 AM	29915
Sodium	550	10		mg/L	10	1/30/2017 3:15:44 PM	29915
EPA METHOD 8270C: PAHS							Analyst: DAM
Naphthalene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
1-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
2-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Acenaphthylene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Acenaphthene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Fluorene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Phenanthrene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Anthracene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Pyrene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-24D

Project: GBR Annual Sampling

Collection Date: 1/13/2017 12:45:00 PM

Lab ID: 1701600-002

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: PAHS							Analyst: DAM
Benz(a)anthracene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Chrysene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Benzo(b)fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Benzo(k)fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Benzo(a)pyrene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Dibenz(a,h)anthracene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Benzo(g,h,i)perylene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Indeno(1,2,3-cd)pyrene	ND	0.50		µg/L	1	1/19/2017 3:34:19 PM	29754
Surr: N-hexadecane	53.7	15-176		%Rec	1	1/19/2017 3:34:19 PM	29754
Surr: Benzo(e)pyrene	53.6	15-198		%Rec	1	1/19/2017 3:34:19 PM	29754
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Toluene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Ethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2-Dichloroethane (EDC)	1.1	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Naphthalene	ND	2.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
2-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Acetone	ND	10		µg/L	1	1/17/2017 3:33:00 AM	B40048
Bromobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Bromodichloromethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Bromoform	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Bromomethane	ND	3.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
2-Butanone	ND	10		µg/L	1	1/17/2017 3:33:00 AM	B40048
Carbon disulfide	ND	10		µg/L	1	1/17/2017 3:33:00 AM	B40048
Carbon Tetrachloride	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Chlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Chloroethane	ND	2.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Chloroform	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Chloromethane	ND	3.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
2-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
4-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
cis-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/17/2017 3:33:00 AM	B40048

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-24D

Project: GBR Annual Sampling

Collection Date: 1/13/2017 12:45:00 PM

Lab ID: 1701600-002

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Dibromochloromethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Dibromomethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1-Dichloroethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1-Dichloroethene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,3-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
2,2-Dichloropropane	ND	2.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Hexachlorobutadiene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
2-Hexanone	ND	10		µg/L	1	1/17/2017 3:33:00 AM	B40048
Isopropylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
4-Isopropyltoluene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
4-Methyl-2-pentanone	ND	10		µg/L	1	1/17/2017 3:33:00 AM	B40048
Methylene Chloride	ND	3.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
n-Butylbenzene	ND	3.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
n-Propylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
sec-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Styrene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
tert-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
trans-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Trichlorofluoromethane	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Vinyl chloride	ND	1.0		µg/L	1	1/17/2017 3:33:00 AM	B40048
Xylenes, Total	ND	1.5		µg/L	1	1/17/2017 3:33:00 AM	B40048
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%Rec	1	1/17/2017 3:33:00 AM	B40048
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/17/2017 3:33:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-24D**Project:** GBR Annual Sampling**Collection Date:** 1/13/2017 12:45:00 PM**Lab ID:** 1701600-002**Matrix:** AQUEOUS**Received Date:** 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Surr: Dibromofluoromethane	93.9	70-130		%Rec	1	1/17/2017 3:33:00 AM	B40048
Surr: Toluene-d8	98.5	70-130		%Rec	1	1/17/2017 3:33:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-31

Project: GBR Annual Sampling

Collection Date: 1/13/2017 11:45:00 AM

Lab ID: 1701600-003

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	1200	6.6		mg/L	1	1/27/2017	R40343
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.98	0.10		mg/L	1	1/23/2017 6:55:44 PM	R40231
Chloride	84	10		mg/L	20	1/23/2017 7:08:09 PM	R40231
Bromide	0.33	0.10		mg/L	1	1/23/2017 6:55:44 PM	R40231
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	1/23/2017 7:08:09 PM	R40231
Sulfate	1700	50	*	mg/L	100	1/24/2017 7:54:10 PM	R40255
Nitrate+Nitrite as N	4.2	1.0		mg/L	5	1/23/2017 8:35:01 PM	R40231
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3400	1.0		µmhos/cm	1	1/16/2017 7:22:08 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	214.8	20.00		mg/L CaCO3	1	1/16/2017 7:22:08 PM	R40056
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/16/2017 7:22:08 PM	R40056
Total Alkalinity (as CaCO3)	214.8	20.00		mg/L CaCO3	1	1/16/2017 7:22:08 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2970	20.0	*	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.38	1.68	H	pH units	1	1/16/2017 7:22:08 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Calcium	430	5.0		mg/L	5	1/27/2017 11:38:17 AM	29915
Iron	1.9	0.10	*	mg/L	5	1/27/2017 11:38:17 AM	29915
Magnesium	38	1.0		mg/L	1	1/27/2017 11:36:34 AM	29915
Manganese	0.18	0.0020	*	mg/L	1	1/27/2017 11:36:34 AM	29915
Potassium	2.6	1.0		mg/L	1	1/27/2017 11:36:34 AM	29915
Sodium	420	5.0		mg/L	5	1/27/2017 11:38:17 AM	29915
EPA METHOD 8270C: PAHS							Analyst: DAM
Naphthalene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
1-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
2-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Acenaphthylene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Acenaphthene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Fluorene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Phenanthrene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Anthracene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Pyrene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-31

Project: GBR Annual Sampling

Collection Date: 1/13/2017 11:45:00 AM

Lab ID: 1701600-003

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: PAHS							Analyst: DAM
Benz(a)anthracene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Chrysene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Benzo(b)fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Benzo(k)fluoranthene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Benzo(a)pyrene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Dibenz(a,h)anthracene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Benzo(g,h,i)perylene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Indeno(1,2,3-cd)pyrene	ND	0.50		µg/L	1	1/19/2017 3:58:29 PM	29754
Surr: N-hexadecane	64.7	15-176		%Rec	1	1/19/2017 3:58:29 PM	29754
Surr: Benzo(e)pyrene	61.3	15-198		%Rec	1	1/19/2017 3:58:29 PM	29754
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Toluene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Ethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Naphthalene	ND	2.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
2-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Acetone	ND	10		µg/L	1	1/17/2017 3:57:00 AM	B40048
Bromobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Bromodichloromethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Bromoform	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Bromomethane	ND	3.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
2-Butanone	ND	10		µg/L	1	1/17/2017 3:57:00 AM	B40048
Carbon disulfide	ND	10		µg/L	1	1/17/2017 3:57:00 AM	B40048
Carbon Tetrachloride	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Chlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Chloroethane	ND	2.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Chloroform	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Chloromethane	ND	3.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
2-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
4-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
cis-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/17/2017 3:57:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-31

Project: GBR Annual Sampling

Collection Date: 1/13/2017 11:45:00 AM

Lab ID: 1701600-003

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Dibromochloromethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Dibromomethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1-Dichloroethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1-Dichloroethene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,3-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
2,2-Dichloropropane	ND	2.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Hexachlorobutadiene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
2-Hexanone	ND	10		µg/L	1	1/17/2017 3:57:00 AM	B40048
Isopropylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
4-Isopropyltoluene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
4-Methyl-2-pentanone	ND	10		µg/L	1	1/17/2017 3:57:00 AM	B40048
Methylene Chloride	ND	3.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
n-Butylbenzene	ND	3.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
n-Propylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
sec-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Styrene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
tert-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
trans-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Trichlorofluoromethane	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Vinyl chloride	ND	1.0		µg/L	1	1/17/2017 3:57:00 AM	B40048
Xylenes, Total	ND	1.5		µg/L	1	1/17/2017 3:57:00 AM	B40048
Surr: 1,2-Dichloroethane-d4	94.8	70-130		%Rec	1	1/17/2017 3:57:00 AM	B40048
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	1/17/2017 3:57:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-31

Project: GBR Annual Sampling

Collection Date: 1/13/2017 11:45:00 AM

Lab ID: 1701600-003

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Surr: Dibromofluoromethane	93.0	70-130		%Rec	1	1/17/2017 3:57:00 AM	B40048
Surr: Toluene-d8	98.1	70-130		%Rec	1	1/17/2017 3:57:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Annual Sampling

Collection Date: 1/13/2017 10:45:00 AM

Lab ID: 1701600-004

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	800	6.6		mg/L	1	1/27/2017	R40343
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.76	0.10		mg/L	1	1/23/2017 7:45:23 PM	R40231
Chloride	100	10		mg/L	20	1/23/2017 7:57:48 PM	R40231
Bromide	0.94	0.10		mg/L	1	1/23/2017 7:45:23 PM	R40231
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	1/23/2017 7:45:23 PM	R40231
Sulfate	720	10	*	mg/L	20	1/23/2017 7:57:48 PM	R40231
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/23/2017 8:47:25 PM	R40231
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3000	1.0		µmhos/cm	1	1/16/2017 7:34:21 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	984.3	20.00		mg/L CaCO3	1	1/16/2017 7:34:21 PM	R40056
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/16/2017 7:34:21 PM	R40056
Total Alkalinity (as CaCO3)	984.3	20.00		mg/L CaCO3	1	1/16/2017 7:34:21 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2210	20.0	*	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.62	1.68	H	pH units	1	1/16/2017 7:34:21 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Calcium	260	5.0		mg/L	5	1/27/2017 11:42:00 AM	29915
Iron	66	2.0	*	mg/L	100	1/30/2017 3:30:40 PM	29915
Magnesium	35	1.0		mg/L	1	1/27/2017 11:40:12 AM	29915
Manganese	3.0	0.010	*	mg/L	5	1/27/2017 11:42:00 AM	29915
Potassium	7.4	1.0		mg/L	1	1/27/2017 11:40:12 AM	29915
Sodium	520	10		mg/L	10	1/30/2017 3:28:53 PM	29915
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Toluene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Ethylbenzene	1.1	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Naphthalene	ND	2.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 4:20:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Annual Sampling

Collection Date: 1/13/2017 10:45:00 AM

Lab ID: 1701600-004

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
2-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Acetone	ND	10		µg/L	1	1/17/2017 4:20:00 AM	B40048
Bromobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Bromodichloromethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Bromoform	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Bromomethane	ND	3.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
2-Butanone	ND	10		µg/L	1	1/17/2017 4:20:00 AM	B40048
Carbon disulfide	ND	10		µg/L	1	1/17/2017 4:20:00 AM	B40048
Carbon Tetrachloride	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Chlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Chloroethane	ND	2.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Chloroform	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Chloromethane	ND	3.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
2-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
4-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
cis-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Dibromochloromethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Dibromomethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1-Dichloroethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1-Dichloroethene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,3-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
2,2-Dichloropropane	ND	2.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Hexachlorobutadiene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
2-Hexanone	ND	10		µg/L	1	1/17/2017 4:20:00 AM	B40048
Isopropylbenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
4-Isopropyltoluene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
4-Methyl-2-pentanone	ND	10		µg/L	1	1/17/2017 4:20:00 AM	B40048
Methylene Chloride	ND	3.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
n-Butylbenzene	ND	3.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
n-Propylbenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
sec-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Annual Sampling

Collection Date: 1/13/2017 10:45:00 AM

Lab ID: 1701600-004

Matrix: AQUEOUS

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Styrene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
tert-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
trans-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Trichlorofluoromethane	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Vinyl chloride	ND	1.0		µg/L	1	1/17/2017 4:20:00 AM	B40048
Xylenes, Total	ND	1.5		µg/L	1	1/17/2017 4:20:00 AM	B40048
Surr: 1,2-Dichloroethane-d4	96.3	70-130		%Rec	1	1/17/2017 4:20:00 AM	B40048
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	1/17/2017 4:20:00 AM	B40048
Surr: Dibromofluoromethane	93.0	70-130		%Rec	1	1/17/2017 4:20:00 AM	B40048
Surr: Toluene-d8	98.7	70-130		%Rec	1	1/17/2017 4:20:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Annual Sampling

Collection Date:

Lab ID: 1701600-005

Matrix: TRIP BLANK

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Toluene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Ethylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Naphthalene	ND	2.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
2-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Acetone	ND	10		µg/L	1	1/17/2017 4:44:00 AM	B40048
Bromobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Bromodichloromethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Bromoform	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Bromomethane	ND	3.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
2-Butanone	ND	10		µg/L	1	1/17/2017 4:44:00 AM	B40048
Carbon disulfide	ND	10		µg/L	1	1/17/2017 4:44:00 AM	B40048
Carbon Tetrachloride	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Chlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Chloroethane	ND	2.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Chloroform	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Chloromethane	ND	3.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
2-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
4-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
cis-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Dibromochloromethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Dibromomethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,1-Dichloroethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,1-Dichloroethene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,3-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
2,2-Dichloropropane	ND	2.0		µg/L	1	1/17/2017 4:44:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701600

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Annual Sampling

Collection Date:

Lab ID: 1701600-005

Matrix: TRIP BLANK

Received Date: 1/14/2017 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,1-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Hexachlorobutadiene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
2-Hexanone	ND	10		µg/L	1	1/17/2017 4:44:00 AM	B40048
Isopropylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
4-Isopropyltoluene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
4-Methyl-2-pentanone	ND	10		µg/L	1	1/17/2017 4:44:00 AM	B40048
Methylene Chloride	ND	3.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
n-Butylbenzene	ND	3.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
n-Propylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
sec-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Styrene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
tert-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
trans-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Trichlorofluoromethane	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Vinyl chloride	ND	1.0		µg/L	1	1/17/2017 4:44:00 AM	B40048
Xylenes, Total	ND	1.5		µg/L	1	1/17/2017 4:44:00 AM	B40048
Surr: 1,2-Dichloroethane-d4	95.3	70-130		%Rec	1	1/17/2017 4:44:00 AM	B40048
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	1/17/2017 4:44:00 AM	B40048
Surr: Dibromofluoromethane	95.2	70-130		%Rec	1	1/17/2017 4:44:00 AM	B40048
Surr: Toluene-d8	99.0	70-130		%Rec	1	1/17/2017 4:44:00 AM	B40048

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	MB-29915		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	29915		RunNo:	40343			
Prep Date:	1/26/2017		Analysis Date:	1/27/2017		SeqNo:	1264551		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-29915		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	29915		RunNo:	40343			
Prep Date:	1/26/2017		Analysis Date:	1/27/2017		SeqNo:	1264552		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	85	115			
Iron	0.50	0.020	0.5000	0	99.6	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Potassium	50	1.0	50.00	0	100	85	115			
Sodium	51	1.0	50.00	0	101	85	115			

Sample ID	LCSLL-29915		SampType:	LCSLL		TestCode:	EPA Method 200.7: Metals			
Client ID:	BatchQC		Batch ID:	29915		RunNo:	40343			
Prep Date:	1/26/2017		Analysis Date:	1/27/2017		SeqNo:	1264553		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	102	50	150			
Iron	0.025	0.020	0.02000	0	124	50	150			
Magnesium	ND	1.0	0.5000	0	108	50	150			
Manganese	0.0020	0.0020	0.002000	0	102	50	150			
Potassium	ND	1.0	0.5000	0	113	50	150			
Sodium	ND	1.0	0.5000	0	119	50	150			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R40231	RunNo:	40231					
Prep Date:		Analysis Date:	1/23/2017	SeqNo:	1261323	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R40231	RunNo:	40231					
Prep Date:		Analysis Date:	1/23/2017	SeqNo:	1261325	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.8	0.50	5.000	0	95.2	90	110			
Bromide	2.4	0.10	2.500	0	96.2	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.2	90	110			
Sulfate	9.6	0.50	10.00	0	96.2	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.7	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R40255	RunNo:	40255					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1262250	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R40255	RunNo:	40255					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1262251	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.7	0.50	10.00	0	96.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	100NG LCS2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B40048			RunNo: 40048					
Prep Date:		Analysis Date: 1/16/2017			SeqNo: 1255199		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.3	70	130			
Toluene	19	1.0	20.00	0	94.6	70	130			
Chlorobenzene	19	1.0	20.00	0	95.1	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	100	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.8	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: B40048			RunNo: 40048					
Prep Date:		Analysis Date: 1/16/2017			SeqNo: 1255200		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: B40048			RunNo: 40048					
Prep Date:		Analysis Date: 1/16/2017			SeqNo: 1255200		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B40048	RunNo:	40048					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1255200	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.2	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600
31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	lcs-29754		SampType: LCS	TestCode: EPA Method 8270C: PAHs						
Client ID:	LCSW		Batch ID: 29754	RunNo: 40147						
Prep Date: 1/18/2017	Analysis Date: 1/19/2017		SeqNo: 1258606		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	14	0.50	20.00	0	69.6	37.4	120			
1-Methylnaphthalene	14	0.50	20.00	0	67.9	39.3	121			
2-Methylnaphthalene	14	0.50	20.00	0	68.4	37.8	122			
Acenaphthylene	15	0.50	20.00	0	73.4	37	124			
Acenaphthene	16	0.50	20.00	0	78.1	35.6	123			
Fluorene	16	0.50	20.00	0	82.4	35.2	122			
Phenanthrene	16	0.50	20.00	0	81.2	38.8	122			
Anthracene	16	0.50	20.00	0	79.2	37.5	125			
Fluoranthene	16	0.50	20.00	0	80.3	37.4	131			
Pyrene	16	0.50	20.00	0	82.1	27.5	140			
Benz(a)anthracene	17	0.50	20.00	0	86.4	25.4	141			
Chrysene	16	0.50	20.00	0	81.4	33.6	155			
Benzo(b)fluoranthene	18	0.50	20.00	0	88.4	39	153			
Benzo(k)fluoranthene	16	0.50	20.00	0	80.4	38	154			
Benzo(a)pyrene	17	0.50	20.00	0	85.1	38.6	153			
Dibenz(a,h)anthracene	17	0.50	20.00	0	86.8	39.7	155			
Benzo(g,h,i)perylene	16	0.50	20.00	0	81.1	39.6	154			
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	86.3	19.1	153			
Surr: N-hexadecane	67		87.60		76.9	15	176			
Surr: Benzo(e)pyrene	16		20.00		80.4	15	198			

Sample ID	lcsd-29754		SampType: LCSD	TestCode: EPA Method 8270C: PAHs						
Client ID:	LCSS02		Batch ID: 29754	RunNo: 40147						
Prep Date: 1/18/2017	Analysis Date: 1/19/2017		SeqNo: 1258607		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	13	0.50	20.00	0	64.4	37.4	120	7.76	20	
1-Methylnaphthalene	13	0.50	20.00	0	67.1	39.3	121	1.19	26.8	
2-Methylnaphthalene	14	0.50	20.00	0	70.0	37.8	122	2.31	23.8	
Acenaphthylene	14	0.50	20.00	0	68.9	37	124	6.32	28.6	
Acenaphthene	15	0.50	20.00	0	75.0	35.6	123	4.05	27	
Fluorene	16	0.50	20.00	0	79.3	35.2	122	3.83	25.7	
Phenanthrene	17	0.50	20.00	0	84.3	38.8	122	3.75	20	
Anthracene	17	0.50	20.00	0	82.9	37.5	125	4.57	21.2	
Fluoranthene	18	0.50	20.00	0	88.8	37.4	131	10.1	21.8	
Pyrene	17	0.50	20.00	0	86.8	27.5	140	5.57	31.1	
Benz(a)anthracene	18	0.50	20.00	0	88.5	25.4	141	2.40	26.6	
Chrysene	17	0.50	20.00	0	86.9	33.6	155	6.54	21.2	
Benzo(b)fluoranthene	17	0.50	20.00	0	85.4	39	153	3.45	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	lcsd-29754		SampType: LCSD		TestCode: EPA Method 8270C: PAHs					
Client ID:	LCSS02		Batch ID: 29754		RunNo: 40147					
Prep Date:	1/18/2017		Analysis Date: 1/19/2017		SeqNo: 1258607		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	17	0.50	20.00	0	84.5	38	154	4.97	21	
Benzo(a)pyrene	17	0.50	20.00	0	85.0	38.6	153	0.118	24.8	
Dibenz(a,h)anthracene	18	0.50	20.00	0	90.4	39.7	155	4.06	26	
Benzo(g,h,i)perylene	17	0.50	20.00	0	85.4	39.6	154	5.17	20	
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	87.4	19.1	153	1.27	20	
Surr: N-hexadecane	63		87.60		71.6	15	176	0	0	
Surr: Benzo(e)pyrene	15		20.00		76.0	15	198	0	0	

Sample ID	mb-29754		SampType: MBLK		TestCode: EPA Method 8270C: PAHs					
Client ID:	PBW		Batch ID: 29754		RunNo: 40147					
Prep Date:	1/18/2017		Analysis Date: 1/19/2017		SeqNo: 1258608		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.50								
1-Methylnaphthalene	ND	0.50								
2-Methylnaphthalene	ND	0.50								
Acenaphthylene	ND	0.50								
Acenaphthene	ND	0.50								
Fluorene	ND	0.50								
Phenanthrene	ND	0.50								
Anthracene	ND	0.50								
Fluoranthene	ND	0.50								
Pyrene	ND	0.50								
Benz(a)anthracene	ND	0.50								
Chrysene	ND	0.50								
Benzo(b)fluoranthene	ND	0.50								
Benzo(k)fluoranthene	ND	0.50								
Benzo(a)pyrene	ND	0.50								
Dibenz(a,h)anthracene	ND	0.50								
Benzo(g,h,i)perylene	ND	0.50								
Indeno(1,2,3-cd)pyrene	ND	0.50								
Surr: N-hexadecane	69		87.60		78.4	15	176			
Surr: Benzo(e)pyrene	14		20.00		68.6	15	198			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600
31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID mb-1	SampType: mbk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R40056	RunNo: 40056								
Prep Date:	Analysis Date: 1/16/2017	SeqNo: 1255292	Units: mg/L CaCO3							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID lcs-1	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R40056	RunNo: 40056								
Prep Date:	Analysis Date: 1/16/2017	SeqNo: 1255293	Units: mg/L CaCO3							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.68	20.00	80.00	0	97.1	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701600

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29736		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	29736		RunNo:	40117				
Prep Date:	1/17/2017		Analysis Date:	1/18/2017		SeqNo:	1257458		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-29736		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 29736		RunNo: 40117					
Prep Date:	1/17/2017		Analysis Date: 1/18/2017		SeqNo: 1257459		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



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 Southw

Work Order Number: 1701600

RcptNo: 1

Received by/date:	LM	01/14/17
Logged By:	Lindsay Mangin	1/14/2017 9:00:00 AM
Completed By:	Lindsay Mangin	1/16/2017 8:26:49 AM
Reviewed By:	Ka	01/16/17

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

# of preserved bottles checked for pH:	8
Adjusted? (<2 or >12 unless noted)	YES
Checked by:	Re

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks: For metals analysis: 1mL HNO_3 was added to 001C for acceptable pH.
18. Cooler Information: Sample was held 24 hrs prior to analysis.

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

Chain-of-Custody Record

Client: Western Refining
Kelly Robinson
 Mailing Address: 111 GR 4990
Bloomfield New Mexico
 Phone #: 505-801-5616
 Mail or Fax#: Kelly Robinson
 A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
 Accreditation
☒ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

GBR Annual Sampling

Project #:

12615518 -> Western P.O.

Project Manager:

Devin Hennemann

Sampler:

Josh Adams

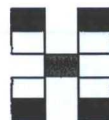
On Ice: ☒ Yes ☐ No

Sample Temperature: 1/16

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
3-17	1600	GW	GRW-3	Various	Various	-001												
	1245	GW	GBR-24D	↓	↓	-002												
	1145	↓	GBR-31	↓	↓	-003												
	1045	↓	SHS-8	↓	↓	-004												
			TRIP BLANK	240ml VOA	HCl	-005												
			<u>La 01/16/17</u>															

Relinquished by: Josh Adams Received by: Jim Wark Date: 1/13/17 Time: 1623
 Relinquished by: Christine Wark Received by: [Signature] Date: 01/13/17 Time: 0900

Remarks: cc: dhenemann@henv.com
jadams@henv.com
Kelly Robinson
Direct bill western P.O.



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

**GIANT BLOOMFIELD REFINERY
WESTERN REFINING
ATTACHMENT TO COC**

SAMPLING CONDUCTED ON _____ BY _____

Sample ID	ANNUALLY (DEC)
GRW-3	VOC GWC PAH
GRW-6	VOC GWC PAH
GBR-12	VOC GWC PAH
GBR-24D	VOC GWC PAH
GBR-30	VOC GWC PAH
GBR-31	VOC GWC PAH
GBR-32	VOC GWC METALS
GBR-48	VOC GWC METALS
GBR-49	VOC GWC METALS
GBR-50	VOC GWC METALS
GBR-51	VOC GWC
GBR-52	VOC GWC
SHS-8	VOC GWC

Analysis	method	Bottle
VOC	method 8260	3 - HCL VOA

PAH	method 8270	1 - Liter Amber (non preserved)
-----	-------------	---------------------------------

GWC		
pH	SM 4500-H+B	1 - 500ml (non preserved)
EC	SM 2510B	
TDS	SM 2540C MOD	
alkalinity	SM 2320B	
hardness	SM 2340B	
ANIONS	EPA Method 300.0	1 - 250ml H2SO4
	nitrate/nitrite	
	bromide	
	chloride	
	sulfate	
	phosphorus	
CATIONS / METALS	fluoride	
	EPA Method 200.7	1 - 500ml HNO3
	calcium	
	iron	
	magnesium	
	manganese	
Metals	potassium	
	sodium	
	EPA Method 200.7	
	barium	
	beryllium	
	cadmium	
	chromium	
	silver	
	lead	
	nickel	
	EPA 200.8	1 - 500ml HNO3
	copper	
	zinc	
	antimony	
	arsenic	
	selenium	
	thallium	
	Epa Method 245.1	
	mercury	





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 31, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: GBR Annual Sampling

OrderNo.: 1701827

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/19/2017 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701827

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-30

Project: GBR Annual Sampling

Collection Date: 1/18/2017 11:55:00 AM

Lab ID: 1701827-001

Matrix: AQUEOUS

Received Date: 1/19/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO ₃)	1300	6.6		mg/L	1	1/27/2017	R40343
EPA METHOD 300.0: ANIONS							Analyst: MRA
Fluoride	0.52	0.50		mg/L	5	1/19/2017 11:10:13 AM	R40163
Chloride	220	10		mg/L	20	1/19/2017 11:47:26 AM	R40163
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	1/19/2017 11:10:13 AM	R40163
Bromide	3.6	0.50		mg/L	5	1/19/2017 11:10:13 AM	R40163
Nitrogen, Nitrate (As N)	5.6	0.50		mg/L	5	1/19/2017 11:10:13 AM	R40163
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	1/19/2017 11:10:13 AM	R40163
Sulfate	1400	25	*	mg/L	50	1/23/2017 8:43:46 PM	R40232
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3300	1.0		µmhos/cm	1	1/19/2017 5:17:24 PM	R40164
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	217.9	20.00		mg/L CaCO ₃	1	1/19/2017 5:17:24 PM	R40164
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/19/2017 5:17:24 PM	R40164
Total Alkalinity (as CaCO ₃)	217.9	20.00		mg/L CaCO ₃	1	1/19/2017 5:17:24 PM	R40164
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2580	200	*D	mg/L	1	1/24/2017 9:21:00 AM	29819
SM4500-H+B: PH							Analyst: JRR
pH	7.27	1.68	H	pH units	1	1/19/2017 5:17:24 PM	R40164
EPA METHOD 200.7: METALS							Analyst: MED
Calcium	430	5.0		mg/L	5	1/27/2017 12:46:19 PM	29914
Iron	64	2.0	*	mg/L	100	1/30/2017 4:00:07 PM	29914
Magnesium	45	1.0		mg/L	1	1/27/2017 12:44:31 PM	29914
Manganese	2.3	0.010	*	mg/L	5	1/27/2017 12:46:19 PM	29914
Potassium	8.6	1.0		mg/L	1	1/27/2017 12:44:31 PM	29914
Sodium	380	5.0		mg/L	5	1/27/2017 12:46:19 PM	29914
EPA METHOD 8270C: PAHS							Analyst: DAM
Naphthalene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
1-Methylnaphthalene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
2-Methylnaphthalene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Acenaphthylene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Acenaphthene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Fluorene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Phenanthrene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Anthracene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Fluoranthene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701827

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-30

Project: GBR Annual Sampling

Collection Date: 1/18/2017 11:55:00 AM

Lab ID: 1701827-001

Matrix: AQUEOUS

Received Date: 1/19/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: PAHS							Analyst: DAM
Pyrene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Benz(a)anthracene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Chrysene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Benzo(b)fluoranthene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Benzo(k)fluoranthene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Benzo(a)pyrene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Dibenz(a,h)anthracene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Benzo(g,h,i)perylene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Indeno(1,2,3-cd)pyrene	ND	0.50		µg/L	1	1/26/2017 11:13:03 AM	29825
Surr: N-hexadecane	81.5	15-176		%Rec	1	1/26/2017 11:13:03 AM	29825
Surr: Benzo(e)pyrene	83.0	15-198		%Rec	1	1/26/2017 11:13:03 AM	29825
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Toluene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Ethylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Naphthalene	ND	2.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1-Methylnaphthalene	ND	4.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
2-Methylnaphthalene	ND	4.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Acetone	ND	10		µg/L	1	1/20/2017 2:26:00 PM	R40185
Bromobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Bromodichloromethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Bromoform	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Bromomethane	ND	3.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
2-Butanone	ND	10		µg/L	1	1/20/2017 2:26:00 PM	R40185
Carbon disulfide	ND	10		µg/L	1	1/20/2017 2:26:00 PM	R40185
Carbon Tetrachloride	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Chlorobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Chloroethane	ND	2.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Chloroform	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Chloromethane	ND	3.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
2-Chlorotoluene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
4-Chlorotoluene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
cis-1,2-DCE	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701827

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-30

Project: GBR Annual Sampling

Collection Date: 1/18/2017 11:55:00 AM

Lab ID: 1701827-001

Matrix: AQUEOUS

Received Date: 1/19/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Dibromochloromethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Dibromomethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1-Dichloroethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1-Dichloroethene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2-Dichloropropane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,3-Dichloropropane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
2,2-Dichloropropane	ND	2.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1-Dichloropropene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Hexachlorobutadiene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
2-Hexanone	ND	10		µg/L	1	1/20/2017 2:26:00 PM	R40185
Isopropylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
4-Isopropyltoluene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
4-Methyl-2-pentanone	ND	10		µg/L	1	1/20/2017 2:26:00 PM	R40185
Methylene Chloride	ND	3.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
n-Butylbenzene	ND	3.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
n-Propylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
sec-Butylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Styrene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
tert-Butylbenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
trans-1,2-DCE	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Trichlorofluoromethane	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Vinyl chloride	ND	1.0		µg/L	1	1/20/2017 2:26:00 PM	R40185
Xylenes, Total	ND	1.5		µg/L	1	1/20/2017 2:26:00 PM	R40185
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%Rec	1	1/20/2017 2:26:00 PM	R40185

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701827

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-30**Project:** GBR Annual Sampling**Collection Date:** 1/18/2017 11:55:00 AM**Lab ID:** 1701827-001**Matrix:** AQUEOUS**Received Date:** 1/19/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	1/20/2017 2:26:00 PM	R40185
Surr: Dibromofluoromethane	96.7	70-130		%Rec	1	1/20/2017 2:26:00 PM	R40185
Surr: Toluene-d8	97.6	70-130		%Rec	1	1/20/2017 2:26:00 PM	R40185

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701827

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Annual Sampling

Collection Date:

Lab ID: 1701827-002

Matrix: TRIP BLANK

Received Date: 1/19/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Toluene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Ethylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Naphthalene	ND	2.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1-Methylnaphthalene	ND	4.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
2-Methylnaphthalene	ND	4.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Acetone	ND	10		µg/L	1	1/20/2017 3:36:00 PM	R40185
Bromobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Bromodichloromethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Bromoform	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Bromomethane	ND	3.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
2-Butanone	ND	10		µg/L	1	1/20/2017 3:36:00 PM	R40185
Carbon disulfide	ND	10		µg/L	1	1/20/2017 3:36:00 PM	R40185
Carbon Tetrachloride	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Chlorobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Chloroethane	ND	2.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Chloroform	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Chloromethane	ND	3.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
2-Chlorotoluene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
4-Chlorotoluene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
cis-1,2-DCE	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Dibromochloromethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Dibromomethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,1-Dichloroethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,1-Dichloroethene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2-Dichloropropane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,3-Dichloropropane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
2,2-Dichloropropane	ND	2.0		µg/L	1	1/20/2017 3:36:00 PM	R40185

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701827

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Annual Sampling

Collection Date:

Lab ID: 1701827-002

Matrix: TRIP BLANK

Received Date: 1/19/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,1-Dichloropropene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Hexachlorobutadiene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
2-Hexanone	ND	10		µg/L	1	1/20/2017 3:36:00 PM	R40185
Isopropylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
4-Isopropyltoluene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
4-Methyl-2-pentanone	ND	10		µg/L	1	1/20/2017 3:36:00 PM	R40185
Methylene Chloride	ND	3.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
n-Butylbenzene	ND	3.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
n-Propylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
sec-Butylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Styrene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
tert-Butylbenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
trans-1,2-DCE	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Trichlorofluoromethane	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Vinyl chloride	ND	1.0		µg/L	1	1/20/2017 3:36:00 PM	R40185
Xylenes, Total	ND	1.5		µg/L	1	1/20/2017 3:36:00 PM	R40185
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%Rec	1	1/20/2017 3:36:00 PM	R40185
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	1/20/2017 3:36:00 PM	R40185
Surr: Dibromofluoromethane	97.0	70-130		%Rec	1	1/20/2017 3:36:00 PM	R40185
Surr: Toluene-d8	99.4	70-130		%Rec	1	1/20/2017 3:36:00 PM	R40185

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29914		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 29914		RunNo: 40343					
Prep Date:	1/26/2017		Analysis Date: 1/27/2017		SeqNo: 1264578		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-29914		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 29914		RunNo: 40343					
Prep Date:	1/26/2017		Analysis Date: 1/27/2017		SeqNo: 1264579		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.3	85	115			
Iron	0.50	0.020	0.5000	0	99.2	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	95.0	85	115			
Potassium	49	1.0	50.00	0	98.5	85	115			
Sodium	50	1.0	50.00	0	99.4	85	115			

Sample ID	LCSLL-29914		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: 29914		RunNo: 40343					
Prep Date:	1/26/2017		Analysis Date: 1/27/2017		SeqNo: 1264583		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	104	50	150			
Iron	0.027	0.020	0.02000	0	135	50	150			
Magnesium	ND	1.0	0.5000	0	108	50	150			
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Potassium	ND	1.0	0.5000	0	120	50	150			
Sodium	ND	1.0	0.5000	0	123	50	150			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R40163	RunNo:	40163					
Prep Date:		Analysis Date:	1/19/2017	SeqNo:	1258930	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID	LCS	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R40163	RunNo:	40163					
Prep Date:		Analysis Date:	1/19/2017	SeqNo:	1258931	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	105	90	110			
Chloride	4.8	0.50	5.000	0	96.2	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.9	90	110			
Bromide	2.4	0.10	2.500	0	97.3	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	96.7	90	110			

Sample ID	1701827-001BMS	SampType:	ms	TestCode:	EPA Method 300.0: Anions					
Client ID:	GBR-30	Batch ID:	R40163	RunNo:	40163					
Prep Date:		Analysis Date:	1/19/2017	SeqNo:	1258933	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.0	0.50	2.500	0.5174	101	70.4	122			
Nitrogen, Nitrite (As N)	5.5	0.50	5.000	0	110	76.7	103			S
Bromide	14	0.50	12.50	3.581	80.7	80.8	108			S
Nitrogen, Nitrate (As N)	18	0.50	12.50	5.623	95.4	84.9	115			
Phosphorus, Orthophosphate (As P)	21	2.5	25.00	0	84.0	77.3	106			

Sample ID	1701827-001BMSD	SampType:	msd	TestCode:	EPA Method 300.0: Anions					
Client ID:	GBR-30	Batch ID:	R40163	RunNo:	40163					
Prep Date:		Analysis Date:	1/19/2017	SeqNo:	1258934	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.0	0.50	2.500	0.5174	101	70.4	122	0.548	20	
Nitrogen, Nitrite (As N)	5.5	0.50	5.000	0	110	76.7	103	0.0659	20	S
Bromide	14	0.50	12.50	3.581	80.9	80.8	108	0.189	20	
Nitrogen, Nitrate (As N)	18	0.50	12.50	5.623	95.2	84.9	115	0.191	20	
Phosphorus, Orthophosphate (As P)	21	2.5	25.00	0	85.0	77.3	106	1.20	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R40232			RunNo: 40232						
Prep Date:		Analysis Date: 1/23/2017			SeqNo: 1261453		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate		ND	0.50								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R40232			RunNo: 40232						
Prep Date:		Analysis Date: 1/23/2017			SeqNo: 1261454		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate		9.7	0.50	10.00	0	97.0	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R40185			RunNo: 40185					
Prep Date:		Analysis Date: 1/20/2017			SeqNo: 1259798		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.4	70	130			
Toluene	20	1.0	20.00	0	97.6	70	130			
Chlorobenzene	19	1.0	20.00	0	96.0	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.2	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.6	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.9	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R40185		RunNo: 40185						
Prep Date:		Analysis Date: 1/20/2017		SeqNo: 1259799		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R40185			RunNo: 40185					
Prep Date:		Analysis Date: 1/20/2017			SeqNo: 1259799		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R40185	RunNo:	40185					
Prep Date:		Analysis Date:	1/20/2017	SeqNo:	1259799	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.7	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.3	70	130			
Surr: Toluene-d8	9.9		10.00		99.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	Ics-29825		SampType: LCS		TestCode: EPA Method 8270C: PAHs					
Client ID:	LCSW		Batch ID: 29825		RunNo: 40323					
Prep Date:	1/23/2017		Analysis Date: 1/26/2017		SeqNo: 1263927		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	15	0.50	20.00	0	74.0	37.4	120			
1-Methylnaphthalene	14	0.50	20.00	0	71.1	39.3	121			
2-Methylnaphthalene	14	0.50	20.00	0	67.8	37.8	122			
Acenaphthylene	15	0.50	20.00	0	75.6	37	124			
Acenaphthene	15	0.50	20.00	0	72.8	35.6	123			
Fluorene	16	0.50	20.00	0	77.9	35.2	122			
Phenanthrene	16	0.50	20.00	0	82.3	38.8	122			
Anthracene	16	0.50	20.00	0	80.8	37.5	125			
Fluoranthene	16	0.50	20.00	0	80.9	37.4	131			
Pyrene	17	0.50	20.00	0	86.4	27.5	140			
Benz(a)anthracene	17	0.50	20.00	0	85.4	25.4	141			
Chrysene	17	0.50	20.00	0	82.6	33.6	155			
Benzo(b)fluoranthene	17	0.50	20.00	0	84.3	39	153			
Benzo(k)fluoranthene	16	0.50	20.00	0	79.5	38	154			
Benzo(a)pyrene	16	0.50	20.00	0	82.0	38.6	153			
Dibenz(a,h)anthracene	17	0.50	20.00	0	85.2	39.7	155			
Benzo(g,h,i)perylene	17	0.50	20.00	0	83.9	39.6	154			
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	86.7	19.1	153			
Surr: N-hexadecane	67		87.60		76.4	15	176			
Surr: Benzo(e)pyrene	18		20.00		90.6	15	198			

Sample ID	Icsd-29825		SampType: LCSD			TestCode: EPA Method 8270C: PAHs				
Client ID:	LCSS02		Batch ID: 29825			RunNo: 40323				
Prep Date:	1/23/2017		Analysis Date: 1/26/2017			SeqNo: 1263928		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	13	0.50	20.00	0	64.0	37.4	120	14.5	20	
1-Methylnaphthalene	13	0.50	20.00	0	64.9	39.3	121	9.12	26.8	
2-Methylnaphthalene	13	0.50	20.00	0	64.5	37.8	122	4.99	23.8	
Acenaphthylene	14	0.50	20.00	0	69.2	37	124	8.84	28.6	
Acenaphthene	14	0.50	20.00	0	67.9	35.6	123	6.97	27	
Fluorene	14	0.50	20.00	0	70.5	35.2	122	9.97	25.7	
Phenanthrene	16	0.50	20.00	0	81.4	38.8	122	1.10	20	
Anthracene	15	0.50	20.00	0	75.3	37.5	125	7.05	21.2	
Fluoranthene	15	0.50	20.00	0	76.6	37.4	131	5.46	21.8	
Pyrene	15	0.50	20.00	0	75.1	27.5	140	13.9	31.1	
Benz(a)anthracene	15	0.50	20.00	0	74.4	25.4	141	13.8	26.6	
Chrysene	15	0.50	20.00	0	73.8	33.6	155	11.3	21.2	
Benzo(b)fluoranthene	14	0.50	20.00	0	70.0	39	153	18.5	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	lcsd-29825		SampType: LCSD		TestCode: EPA Method 8270C: PAHs					
Client ID:	LCSS02		Batch ID: 29825		RunNo: 40323					
Prep Date:	1/23/2017		Analysis Date: 1/26/2017		SeqNo: 1263928		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	14	0.50	20.00	0	69.1	38	154	14.0	21	
Benzo(a)pyrene	14	0.50	20.00	0	70.8	38.6	153	14.7	24.8	
Dibenz(a,h)anthracene	15	0.50	20.00	0	72.8	39.7	155	15.7	26	
Benzo(g,h,i)perylene	15	0.50	20.00	0	74.7	39.6	154	11.6	20	
Indeno(1,2,3-cd)pyrene	15	0.50	20.00	0	74.1	19.1	153	15.7	20	
Surr: N-hexadecane	65		87.60		73.9	15	176	0	0	
Surr: Benzo(e)pyrene	15		20.00		74.8	15	198	0	0	

Sample ID	mb-29825		SampType: MBLK		TestCode: EPA Method 8270C: PAHs					
Client ID:	PBW		Batch ID: 29825		RunNo: 40323					
Prep Date:	1/23/2017		Analysis Date: 1/26/2017		SeqNo: 1263929		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.50								
1-Methylnaphthalene	ND	0.50								
2-Methylnaphthalene	ND	0.50								
Acenaphthylene	ND	0.50								
Acenaphthene	ND	0.50								
Fluorene	ND	0.50								
Phenanthrene	ND	0.50								
Anthracene	ND	0.50								
Fluoranthene	ND	0.50								
Pyrene	ND	0.50								
Benz(a)anthracene	ND	0.50								
Chrysene	ND	0.50								
Benzo(b)fluoranthene	ND	0.50								
Benzo(k)fluoranthene	ND	0.50								
Benzo(a)pyrene	ND	0.50								
Dibenz(a,h)anthracene	ND	0.50								
Benzo(g,h,i)perylene	ND	0.50								
Indeno(1,2,3-cd)pyrene	ND	0.50								
Surr: N-hexadecane	75		87.60		85.7	15	176			
Surr: Benzo(e)pyrene	18		20.00		89.6	15	198			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	mb-1	SampType	mblk	TestCode	SM2320B: Alkalinity					
Client ID	PBW	Batch ID	R40164	RunNo	40164					
Prep Date:		Analysis Date	1/19/2017	SeqNo	1259028	Units	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1	SampType	lcs	TestCode	SM2320B: Alkalinity					
Client ID	LCSW	Batch ID	R40164	RunNo	40164					
Prep Date:		Analysis Date	1/19/2017	SeqNo	1259029	Units	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.68	20.00	80.00	0	97.1	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701827

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29819		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	29819		RunNo:	40233				
Prep Date:	1/21/2017		Analysis Date:	1/24/2017		SeqNo:	1261497		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-29819		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 29819		RunNo: 40233					
Prep Date:	1/21/2017		Analysis Date: 1/24/2017		SeqNo: 1261498		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



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 Southw

Work Order Number: 1701827

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

1/19/2017 7:35:00 AM

Completed By: Lindsay Mangin

1/19/2017 9:29:51 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH: 2
(≤ 2 or >12 unless noted)
Adjusted? NO
Checked by: La

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No.	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: Kelly Robinson		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
Western Refining		Project Name:	
Mailing Address: 111 CR 4990		GBR Annual Sampling	
Bloomfield, NM		Project #:	
Phone #: (505) 801-5616		12615518	
Email or Fax#: Kelly.Robinson@WNR.com		Project Manager:	
A/QC Package:		Devin Henschmann	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: Michael Wicker	
Accreditation		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input checked="" type="checkbox"/> NELAP <input type="checkbox"/> Other		Sample Temperature: 1.3	
<input checked="" type="checkbox"/> EDD (Type)			

☒ Standard ☐ Rush

GBR Annual Sampling

12615518

Devin Henschmann

Sampler: Michael Wicker

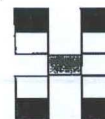
On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
18-17	11:23	[Signature]	Charlotte Wachs	11/18/17	11:23
ate:	Time:	Relinquished by:	Received by:	Date	Time
1/17	1904	Charlotte Labele	[Signature]	01/19/19	0735

Remarks:



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

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.

**GIANT BLOOMFIELD REFINERY
WESTERN REFINING
ATTACHMENT TO COC**

SAMPLING CONDUCTED ON 1 - 18 - 2017 BY Michael A Wicker

Sample ID	ANNUALLY (OCT)
System Influent	VOC
	GWC
System Effluent	VOC
	GWC
	METALS
	PAH
GRW-3	VOC
	GWC
	PAH
GRW-6	VOC
	GWC
	PAH
GBR-17	VOC
	GWC
	PAH
GBR-24D	VOC
	GWC
	PAH
GBR-30	VOC
	GWC
	PAH
GBR-31	VOC
	GWC
	PAH
GBR-32	VOC
	GWC
	METALS
GBR-48	VOC
	GWC
	METALS
GBR-49	VOC
	GWC
	METALS
GBR-50	VOC
	GWC
	METALS
GBR-51	VOC
	GWC
GBR-52	VOC
	GWC
SHS-8	VOC
	GWC

Analysis	method	Bottle
VOC	method 8260	3 - HCL VOA

PAH	method 8270	1 - Liter Amber (non preserved)
-----	-------------	---------------------------------

ANIONS	SM 4500-H+B	1 - 500ml (non preserved)
	SM 2510B	
	SM 2540C MOD	
	SM 2320B	
	SM 2340B	
ANIONS	EPA Method 300.0	1 - 250ml H2SO4
	nitrate/nitrite	
	bromide	
	chloride	
	sulfate	
CATIONS/METALS	phosphorus	1 - 500ml HNO3
	fluoride	
	EPA Method 200.7	
	calcium	
	iron	
Metals	magnesium	1 - 500ml HNO3
	manganese	
	potassium	
	sodium	
	EPA Method 200.7	
	barium	
	beryllium	
	cadmium	
	chromium	
	silver	
	lead	
	nickel	
	EPA 200.8	
	copper	
	zinc	
	antimony	
	arsenic	
	selenium	
	thallium	
	Epa Method 245.1	
	mercury	





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 31, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX

RE: GBR Annual Sampling

OrderNo.: 1701540

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 5 sample(s) on 1/13/2017 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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-17

Project: GBR Annual Sampling

Collection Date: 1/12/2017 11:50:00 AM

Lab ID: 1701540-001

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: TES
Hardness (As CaCO ₃)	820	6.6		mg/L	1	1/20/2017	R40177
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.65	0.10		mg/L	1	1/24/2017 5:25:14 PM	R40241
Chloride	46	10		mg/L	20	1/18/2017 2:25:02 AM	A40102
Bromide	0.26	0.10		mg/L	1	1/18/2017 2:12:37 AM	A40102
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	1/18/2017 2:25:02 AM	A40102
Sulfate	1100	25	*	mg/L	50	1/20/2017 5:15:44 PM	R40195
Nitrate+Nitrite as N	5.4	1.0		mg/L	5	1/20/2017 7:32:17 PM	R40195
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2300	1.0		µmhos/cm	1	1/16/2017 3:28:30 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	213.2	20.00		mg/L CaCO ₃	1	1/16/2017 3:28:30 PM	R40056
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/16/2017 3:28:30 PM	R40056
Total Alkalinity (as CaCO ₃)	213.2	20.00		mg/L CaCO ₃	1	1/16/2017 3:28:30 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1890	40.0	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.32	1.68	H	pH units	1	1/16/2017 3:28:30 PM	R40056
EPA METHOD 200.7: METALS							Analyst: TES
Calcium	280	10		mg/L	10	1/20/2017 8:32:54 PM	29771
Iron	15	1.0	*	mg/L	50	1/24/2017 7:57:08 AM	29771
Magnesium	28	1.0		mg/L	1	1/20/2017 8:31:14 PM	29771
Manganese	0.35	0.0020	*	mg/L	1	1/20/2017 8:31:14 PM	29771
Potassium	1.6	1.0		mg/L	1	1/20/2017 8:31:14 PM	29771
Sodium	220	10		mg/L	10	1/20/2017 8:32:54 PM	29771
EPA METHOD 8270C: PAHS							Analyst: DAM
Naphthalene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
1-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
2-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Acenaphthylene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Acenaphthene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Fluorene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Phenanthrene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Anthracene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Fluoranthene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Pyrene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-17

Project: GBR Annual Sampling

Collection Date: 1/12/2017 11:50:00 AM

Lab ID: 1701540-001

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: PAHS							Analyst: DAM
Benz(a)anthracene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Chrysene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Benzo(b)fluoranthene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Benzo(k)fluoranthene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Benzo(a)pyrene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Dibenz(a,h)anthracene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Benzo(g,h,i)perylene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Indeno(1,2,3-cd)pyrene	ND	0.50		µg/L	1	1/19/2017 2:45:55 PM	29754
Surr: N-hexadecane	69.6	15-176		%Rec	1	1/19/2017 2:45:55 PM	29754
Surr: Benzo(e)pyrene	64.2	15-198		%Rec	1	1/19/2017 2:45:55 PM	29754
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Toluene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Ethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Naphthalene	ND	2.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Acetone	ND	10		µg/L	1	1/14/2017 2:11:00 AM	B40014
Bromobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Bromodichloromethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Bromoform	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Bromomethane	ND	3.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
2-Butanone	ND	10		µg/L	1	1/14/2017 2:11:00 AM	B40014
Carbon disulfide	ND	10		µg/L	1	1/14/2017 2:11:00 AM	B40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Chlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Chloroethane	ND	2.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Chloroform	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Chloromethane	ND	3.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/14/2017 2:11:00 AM	B40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-17

Project: GBR Annual Sampling

Collection Date: 1/12/2017 11:50:00 AM

Lab ID: 1701540-001

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Dibromochloromethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Dibromomethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
2-Hexanone	ND	10		µg/L	1	1/14/2017 2:11:00 AM	B40014
Isopropylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/14/2017 2:11:00 AM	B40014
Methylene Chloride	ND	3.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
n-Butylbenzene	ND	3.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
n-Propylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
sec-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Styrene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Trichlorofluoromethane	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Vinyl chloride	ND	1.0		µg/L	1	1/14/2017 2:11:00 AM	B40014
Xylenes, Total	ND	1.5		µg/L	1	1/14/2017 2:11:00 AM	B40014
Surr: 1,2-Dichloroethane-d4	99.2	70-130		%Rec	1	1/14/2017 2:11:00 AM	B40014
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/14/2017 2:11:00 AM	B40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-17

Project: GBR Annual Sampling

Collection Date: 1/12/2017 11:50:00 AM

Lab ID: 1701540-001

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Surr: Dibromofluoromethane	96.7	70-130		%Rec	1	1/14/2017 2:11:00 AM	B40014
Surr: Toluene-d8	98.0	70-130		%Rec	1	1/14/2017 2:11:00 AM	B40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-49

Project: GBR Annual Sampling

Collection Date: 1/12/2017 12:50:00 PM

Lab ID: 1701540-002

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	1/23/2017 1:31:33 PM	29771
Arsenic	0.0042	0.0010		mg/L	1	1/23/2017 1:31:33 PM	29771
Copper	0.013	0.0010		mg/L	1	1/23/2017 1:31:33 PM	29771
Lead	0.0072	0.00050		mg/L	1	1/23/2017 1:31:33 PM	29771
Selenium	0.0081	0.0010		mg/L	1	1/23/2017 1:31:33 PM	29771
Thallium	ND	0.00050		mg/L	1	1/23/2017 1:31:33 PM	29771
SM2340B: HARDNESS							Analyst: TES
Hardness (As CaCO3)	1200	6.6		mg/L	1	1/20/2017	R40177
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.99	0.10		mg/L	1	1/24/2017 5:37:38 PM	R40241
Chloride	210	10		mg/L	20	1/18/2017 2:49:51 AM	A40102
Bromide	0.98	0.10		mg/L	1	1/18/2017 2:37:26 AM	A40102
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	1/18/2017 2:49:51 AM	A40102
Sulfate	1900	50	*	mg/L	100	1/20/2017 5:40:34 PM	R40195
Nitrate+Nitrite as N	1.9	1.0		mg/L	5	1/20/2017 7:44:41 PM	R40195
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3800	1.0		µmhos/cm	1	1/16/2017 3:44:26 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	260.7	20.00		mg/L CaCO3	1	1/16/2017 3:44:26 PM	R40056
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/16/2017 3:44:26 PM	R40056
Total Alkalinity (as CaCO3)	260.7	20.00		mg/L CaCO3	1	1/16/2017 3:44:26 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3160	100	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.31	1.68	H	pH units	1	1/16/2017 3:44:26 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Barium	0.10	0.0020		mg/L	1	1/24/2017 7:01:07 AM	29771
Beryllium	ND	0.0020		mg/L	1	1/24/2017 7:01:07 AM	29771
Cadmium	ND	0.0020		mg/L	1	1/24/2017 7:01:07 AM	29771
Calcium	410	5.0		mg/L	5	1/20/2017 8:36:42 PM	29771
Chromium	0.20	0.0060	*	mg/L	1	1/20/2017 8:35:04 PM	29771
Iron	11	1.0	*	mg/L	50	1/24/2017 8:00:59 AM	29771
Magnesium	43	1.0		mg/L	1	1/20/2017 8:35:04 PM	29771
Manganese	1.1	0.010	*	mg/L	5	1/20/2017 8:36:42 PM	29771
Nickel	0.20	0.010	*	mg/L	1	1/24/2017 7:59:15 AM	29771
Potassium	2.5	1.0		mg/L	1	1/20/2017 8:35:04 PM	29771

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-49

Project: GBR Annual Sampling

Collection Date: 1/12/2017 12:50:00 PM

Lab ID: 1701540-002

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: METALS							Analyst: MED
Silver	ND	0.0050		mg/L	1	1/24/2017 7:01:07 AM	29771
Sodium	430	5.0		mg/L	5	1/20/2017 8:36:42 PM	29771
Zinc	0.036	0.010		mg/L	1	1/24/2017 7:59:15 AM	29771
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	1/17/2017 10:52:24 AM	29703
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Toluene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Ethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Naphthalene	ND	2.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Acetone	ND	10		µg/L	1	1/14/2017 2:35:00 AM	B40014
Bromobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Bromodichloromethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Bromoform	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Bromomethane	ND	3.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
2-Butanone	ND	10		µg/L	1	1/14/2017 2:35:00 AM	B40014
Carbon disulfide	ND	10		µg/L	1	1/14/2017 2:35:00 AM	B40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Chlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Chloroethane	ND	2.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Chloroform	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Chloromethane	ND	3.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Dibromochloromethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Dibromomethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-49

Project: GBR Annual Sampling

Collection Date: 1/12/2017 12:50:00 PM

Lab ID: 1701540-002

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
2-Hexanone	ND	10		µg/L	1	1/14/2017 2:35:00 AM	B40014
Isopropylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/14/2017 2:35:00 AM	B40014
Methylene Chloride	ND	3.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
n-Butylbenzene	ND	3.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
n-Propylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
sec-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Styrene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Tetrachloroethene (PCE)	1.3	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Trichlorofluoromethane	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Vinyl chloride	ND	1.0		µg/L	1	1/14/2017 2:35:00 AM	B40014
Xylenes, Total	ND	1.5		µg/L	1	1/14/2017 2:35:00 AM	B40014
Surr: 1,2-Dichloroethane-d4	97.8	70-130		%Rec	1	1/14/2017 2:35:00 AM	B40014
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	1/14/2017 2:35:00 AM	B40014
Surr: Dibromofluoromethane	93.4	70-130		%Rec	1	1/14/2017 2:35:00 AM	B40014
Surr: Toluene-d8	98.7	70-130		%Rec	1	1/14/2017 2:35:00 AM	B40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-32

Project: GBR Annual Sampling

Collection Date: 1/12/2017 1:55:00 PM

Lab ID: 1701540-003

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	1/23/2017 1:36:42 PM	29771
Arsenic	ND	0.0050		mg/L	5	1/23/2017 2:21:09 PM	29771
Copper	0.017	0.0010		mg/L	1	1/23/2017 1:36:42 PM	29771
Lead	0.0048	0.00050		mg/L	1	1/23/2017 1:36:42 PM	29771
Selenium	0.0099	0.0010		mg/L	1	1/23/2017 1:36:42 PM	29771
Thallium	ND	0.00050		mg/L	1	1/23/2017 1:36:42 PM	29771
SM2340B: HARDNESS							Analyst: TES
Hardness (As CaCO3)	1300	6.6		mg/L	1	1/20/2017	R40177
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.83	0.10		mg/L	1	1/24/2017 5:50:03 PM	R40241
Chloride	320	10	*	mg/L	20	1/18/2017 3:14:41 AM	A40102
Bromide	1.5	0.10		mg/L	1	1/18/2017 3:02:15 AM	A40102
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	1/18/2017 3:14:41 AM	A40102
Sulfate	2000	50	*	mg/L	100	1/20/2017 5:52:59 PM	R40195
Nitrate+Nitrite as N	1.0	1.0		mg/L	5	1/20/2017 7:57:06 PM	R40195
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4100	1.0		µmhos/cm	1	1/16/2017 3:57:41 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	246.5	20.00		mg/L CaCO3	1	1/16/2017 3:57:41 PM	R40056
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/16/2017 3:57:41 PM	R40056
Total Alkalinity (as CaCO3)	246.5	20.00		mg/L CaCO3	1	1/16/2017 3:57:41 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3500	100	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.01	1.68	H	pH units	1	1/16/2017 3:57:41 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Barium	0.092	0.0020		mg/L	1	1/24/2017 7:05:02 AM	29771
Beryllium	ND	0.0020		mg/L	1	1/24/2017 7:05:02 AM	29771
Cadmium	ND	0.0020		mg/L	1	1/24/2017 7:05:02 AM	29771
Calcium	430	5.0		mg/L	5	1/20/2017 8:40:23 PM	29771
Chromium	0.33	0.0060	*	mg/L	1	1/20/2017 8:38:43 PM	29771
Iron	11	1.0	*	mg/L	50	1/24/2017 8:04:48 AM	29771
Magnesium	46	1.0		mg/L	1	1/20/2017 8:38:43 PM	29771
Manganese	1.2	0.010	*	mg/L	5	1/20/2017 8:40:23 PM	29771
Nickel	0.33	0.010	*	mg/L	1	1/24/2017 8:03:07 AM	29771
Potassium	2.6	1.0		mg/L	1	1/20/2017 8:38:43 PM	29771

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-32

Project: GBR Annual Sampling

Collection Date: 1/12/2017 1:55:00 PM

Lab ID: 1701540-003

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: METALS							Analyst: MED
Silver	ND	0.0050		mg/L	1	1/24/2017 7:05:02 AM	29771
Sodium	560	50		mg/L	50	1/24/2017 7:06:42 AM	29771
Zinc	0.023	0.010		mg/L	1	1/24/2017 8:03:07 AM	29771
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	1/17/2017 10:54:28 AM	29703
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Toluene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Ethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Naphthalene	ND	2.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Acetone	ND	10		µg/L	1	1/14/2017 2:59:00 AM	B40014
Bromobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Bromodichloromethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Bromoform	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Bromomethane	ND	3.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
2-Butanone	ND	10		µg/L	1	1/14/2017 2:59:00 AM	B40014
Carbon disulfide	ND	10		µg/L	1	1/14/2017 2:59:00 AM	B40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Chlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Chloroethane	ND	2.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Chloroform	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Chloromethane	ND	3.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Dibromochloromethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Dibromomethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-32

Project: GBR Annual Sampling

Collection Date: 1/12/2017 1:55:00 PM

Lab ID: 1701540-003

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
2-Hexanone	ND	10		µg/L	1	1/14/2017 2:59:00 AM	B40014
Isopropylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/14/2017 2:59:00 AM	B40014
Methylene Chloride	ND	3.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
n-Butylbenzene	ND	3.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
n-Propylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
sec-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Styrene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Tetrachloroethene (PCE)	1.3	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Trichlorofluoromethane	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Vinyl chloride	ND	1.0		µg/L	1	1/14/2017 2:59:00 AM	B40014
Xylenes, Total	ND	1.5		µg/L	1	1/14/2017 2:59:00 AM	B40014
Surr: 1,2-Dichloroethane-d4	99.9	70-130		%Rec	1	1/14/2017 2:59:00 AM	B40014
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/14/2017 2:59:00 AM	B40014
Surr: Dibromofluoromethane	97.6	70-130		%Rec	1	1/14/2017 2:59:00 AM	B40014
Surr: Toluene-d8	98.9	70-130		%Rec	1	1/14/2017 2:59:00 AM	B40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-48

Project: GBR Annual Sampling

Collection Date: 1/12/2017 3:10:00 PM

Lab ID: 1701540-004

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	1/23/2017 1:41:50 PM	29771
Arsenic	0.010	0.0010	*	mg/L	1	1/23/2017 1:41:50 PM	29771
Copper	0.12	0.0050		mg/L	5	1/23/2017 2:26:18 PM	29771
Lead	0.066	0.0025	*	mg/L	5	1/23/2017 2:26:18 PM	29771
Selenium	0.014	0.0010		mg/L	1	1/23/2017 1:41:50 PM	29771
Thallium	0.0014	0.00050		mg/L	1	1/23/2017 1:41:50 PM	29771
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	1900	6.6		mg/L	1	1/24/2017	R40223
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.87	0.10		mg/L	1	1/24/2017 6:02:28 PM	R40241
Chloride	340	25	*	mg/L	50	1/20/2017 6:55:02 PM	R40195
Bromide	0.99	0.10		mg/L	1	1/20/2017 6:42:38 PM	R40195
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	1/20/2017 6:42:38 PM	R40195
Sulfate	2000	25	*	mg/L	50	1/20/2017 6:55:02 PM	R40195
Nitrate+Nitrite as N	3.2	1.0		mg/L	5	1/20/2017 8:09:30 PM	R40195
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4300	1.0		µmhos/cm	1	1/16/2017 4:10:59 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	276.8	20.00		mg/L CaCO3	1	1/16/2017 4:10:59 PM	R40056
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/16/2017 4:10:59 PM	R40056
Total Alkalinity (as CaCO3)	276.8	20.00		mg/L CaCO3	1	1/16/2017 4:10:59 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3360	200	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.26	1.68	H	pH units	1	1/16/2017 4:10:59 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Barium	0.52	0.0020		mg/L	1	1/24/2017 7:08:48 AM	29771
Beryllium	0.0065	0.0020	*	mg/L	1	1/24/2017 7:08:48 AM	29771
Cadmium	ND	0.0020		mg/L	1	1/24/2017 7:08:48 AM	29771
Calcium	650	100		mg/L	100	1/24/2017 8:08:43 AM	29771
Chromium	0.42	0.0060	*	mg/L	1	1/20/2017 8:42:20 PM	29771
Iron	89	2.0	*	mg/L	100	1/24/2017 8:08:43 AM	29771
Magnesium	66	1.0		mg/L	1	1/24/2017 8:06:55 AM	29771
Manganese	4.8	0.010	*	mg/L	5	1/20/2017 8:51:27 PM	29771
Nickel	0.24	0.010	*	mg/L	1	1/24/2017 8:06:55 AM	29771
Potassium	13	1.0		mg/L	1	1/20/2017 8:42:20 PM	29771

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-48

Project: GBR Annual Sampling

Collection Date: 1/12/2017 3:10:00 PM

Lab ID: 1701540-004

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: METALS							Analyst: MED
Silver	ND	0.0050		mg/L	1	1/24/2017 7:08:48 AM	29771
Sodium	460	5.0		mg/L	5	1/20/2017 8:51:27 PM	29771
Zinc	0.20	0.010		mg/L	1	1/24/2017 8:06:55 AM	29771
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	1/17/2017 10:56:26 AM	29703
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Toluene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Ethylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Naphthalene	ND	2.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Acetone	ND	10		µg/L	1	1/14/2017 3:23:00 AM	B40014
Bromobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Bromodichloromethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Bromoform	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Bromomethane	ND	3.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
2-Butanone	ND	10		µg/L	1	1/14/2017 3:23:00 AM	B40014
Carbon disulfide	ND	10		µg/L	1	1/14/2017 3:23:00 AM	B40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Chlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Chloroethane	ND	2.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Chloroform	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Chloromethane	ND	3.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Dibromochloromethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Dibromomethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-48

Project: GBR Annual Sampling

Collection Date: 1/12/2017 3:10:00 PM

Lab ID: 1701540-004

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
2-Hexanone	ND	10		µg/L	1	1/14/2017 3:23:00 AM	B40014
Isopropylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/14/2017 3:23:00 AM	B40014
Methylene Chloride	ND	3.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
n-Butylbenzene	ND	3.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
n-Propylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
sec-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Styrene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Trichlorofluoromethane	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Vinyl chloride	ND	1.0		µg/L	1	1/14/2017 3:23:00 AM	B40014
Xylenes, Total	ND	1.5		µg/L	1	1/14/2017 3:23:00 AM	B40014
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	1/14/2017 3:23:00 AM	B40014
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/14/2017 3:23:00 AM	B40014
Surr: Dibromofluoromethane	98.1	70-130		%Rec	1	1/14/2017 3:23:00 AM	B40014
Surr: Toluene-d8	99.4	70-130		%Rec	1	1/14/2017 3:23:00 AM	B40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-50

Project: GBR Annual Sampling

Collection Date: 1/12/2017 4:20:00 PM

Lab ID: 1701540-005

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	1/23/2017 1:46:58 PM	29771
Arsenic	0.0043	0.0010		mg/L	1	1/23/2017 1:46:58 PM	29771
Copper	0.011	0.0010		mg/L	1	1/23/2017 1:46:58 PM	29771
Lead	0.0032	0.00050		mg/L	1	1/23/2017 1:46:58 PM	29771
Selenium	0.0081	0.0010		mg/L	1	1/23/2017 1:46:58 PM	29771
Thallium	ND	0.00050		mg/L	1	1/23/2017 1:46:58 PM	29771
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	1100	6.6		mg/L	1	1/24/2017	R40223
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	1.1	0.10		mg/L	1	1/24/2017 6:14:52 PM	R40241
Chloride	59	25		mg/L	50	1/20/2017 7:19:52 PM	R40195
Bromide	0.24	0.10		mg/L	1	1/20/2017 7:07:27 PM	R40195
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	1/20/2017 7:07:27 PM	R40195
Sulfate	1500	25	*	mg/L	50	1/20/2017 7:19:52 PM	R40195
Nitrate+Nitrite as N	2.4	1.0		mg/L	5	1/20/2017 8:21:55 PM	R40195
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3000	1.0		µmhos/cm	1	1/16/2017 4:24:57 PM	R40056
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	273.0	20.00		mg/L CaCO3	1	1/16/2017 4:24:57 PM	R40056
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/16/2017 4:24:57 PM	R40056
Total Alkalinity (as CaCO3)	273.0	20.00		mg/L CaCO3	1	1/16/2017 4:24:57 PM	R40056
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2580	100	*D	mg/L	1	1/18/2017 4:23:00 PM	29736
SM4500-H+B: PH							Analyst: JRR
pH	7.35	1.68	H	pH units	1	1/16/2017 4:24:57 PM	R40056
EPA METHOD 200.7: METALS							Analyst: MED
Barium	0.063	0.0020		mg/L	1	1/24/2017 7:12:49 AM	29771
Beryllium	ND	0.0020		mg/L	1	1/24/2017 7:12:49 AM	29771
Cadmium	ND	0.0020		mg/L	1	1/24/2017 7:12:49 AM	29771
Calcium	400	10		mg/L	10	1/24/2017 8:23:13 AM	29771
Chromium	0.36	0.0060	*	mg/L	1	1/24/2017 7:12:49 AM	29771
Iron	6.8	0.20	*	mg/L	10	1/24/2017 8:23:13 AM	29771
Magnesium	31	1.0		mg/L	1	1/24/2017 7:12:49 AM	29771
Manganese	1.3	0.020	*	mg/L	10	1/24/2017 8:23:13 AM	29771
Nickel	0.17	0.010	*	mg/L	1	1/24/2017 8:10:46 AM	29771
Potassium	1.8	1.0		mg/L	1	1/20/2017 8:53:18 PM	29771

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-50

Project: GBR Annual Sampling

Collection Date: 1/12/2017 4:20:00 PM

Lab ID: 1701540-005

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: METALS							Analyst: MED
Silver	ND	0.0050		mg/L	1	1/24/2017 7:12:49 AM	29771
Sodium	340	5.0		mg/L	5	1/20/2017 8:54:58 PM	29771
Zinc	0.020	0.010		mg/L	1	1/24/2017 8:10:46 AM	29771
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	1/17/2017 10:58:24 AM	29703
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Toluene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Ethylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Naphthalene	ND	2.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Acetone	ND	10		µg/L	1	1/14/2017 3:46:00 AM	B40014
Bromobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Bromodichloromethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Bromoform	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Bromomethane	ND	3.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
2-Butanone	ND	10		µg/L	1	1/14/2017 3:46:00 AM	B40014
Carbon disulfide	ND	10		µg/L	1	1/14/2017 3:46:00 AM	B40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Chlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Chloroethane	ND	2.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Chloroform	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Chloromethane	ND	3.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Dibromochloromethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Dibromomethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701540

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-50

Project: GBR Annual Sampling

Collection Date: 1/12/2017 4:20:00 PM

Lab ID: 1701540-005

Matrix: AQUEOUS

Received Date: 1/13/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
2-Hexanone	ND	10		µg/L	1	1/14/2017 3:46:00 AM	B40014
Isopropylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/14/2017 3:46:00 AM	B40014
Methylene Chloride	ND	3.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
n-Butylbenzene	ND	3.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
n-Propylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
sec-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Styrene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Trichlorofluoromethane	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Vinyl chloride	ND	1.0		µg/L	1	1/14/2017 3:46:00 AM	B40014
Xylenes, Total	ND	1.5		µg/L	1	1/14/2017 3:46:00 AM	B40014
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%Rec	1	1/14/2017 3:46:00 AM	B40014
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/14/2017 3:46:00 AM	B40014
Surr: Dibromofluoromethane	95.5	70-130		%Rec	1	1/14/2017 3:46:00 AM	B40014
Surr: Toluene-d8	98.2	70-130		%Rec	1	1/14/2017 3:46:00 AM	B40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29771		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	29771		RunNo:	40177			
Prep Date:	1/18/2017		Analysis Date:	1/20/2017		SeqNo:	1259557		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID	LCSLL-29771		SampType:	LCSLL		TestCode:	EPA Method 200.7: Metals			
Client ID:	BatchQC		Batch ID:	29771		RunNo:	40177			
Prep Date:	1/18/2017		Analysis Date:	1/20/2017		SeqNo:	1259643		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020	0.002000	0	77.0	50	150			
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Calcium	ND	1.0	0.5000	0	93.6	50	150			
Chromium	ND	0.0060	0.006000	0	89.3	50	150			
Iron	0.023	0.020	0.02000	0	115	50	150			
Magnesium	ND	1.0	0.5000	0	100	50	150			
Manganese	ND	0.0020	0.002000	0	98.0	50	150			
Potassium	ND	1.0	0.5000	0	64.7	50	150			
Silver	ND	0.0050	0.005000	0	90.4	50	150			
Sodium	ND	1.0	0.5000	0	83.7	50	150			

Sample ID	LCS-29771		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	29771		RunNo:	40177			
Prep Date:	1/18/2017		Analysis Date:	1/20/2017		SeqNo:	1259644		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.48	0.0020	0.5000	0	95.9	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.7	85	115			
Calcium	48	1.0	50.00	0	96.5	85	115			
Chromium	0.46	0.0060	0.5000	0	92.8	85	115			
Iron	0.47	0.020	0.5000	0	93.0	85	115			
Magnesium	48	1.0	50.00	0	96.9	85	115			
Manganese	0.46	0.0020	0.5000	0	91.4	85	115			
Potassium	47	1.0	50.00	0	93.1	85	115			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	LCS-29771		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	29771		RunNo:	40177			
Prep Date:	1/18/2017		Analysis Date:	1/20/2017		SeqNo:	1259644		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.087	0.0050	0.1000	0	87.4	85	115			
Sodium	47	1.0	50.00	0	93.2	85	115			

Sample ID	MB-29771		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	29771		RunNo:	40223			
Prep Date:	1/18/2017		Analysis Date:	1/24/2017		SeqNo:	1261598		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID	LCS-29771		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	29771		RunNo:	40223			
Prep Date:	1/18/2017		Analysis Date:	1/24/2017		SeqNo:	1261599		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.45	0.010	0.5000	0	89.1	85	115			
Zinc	0.46	0.010	0.5000	0	92.4	85	115			

Sample ID	LCSLL-29771		SampType:	LCSLL		TestCode:	EPA Method 200.7: Metals			
Client ID:	BatchQC		Batch ID:	29771		RunNo:	40223			
Prep Date:	1/18/2017		Analysis Date:	1/24/2017		SeqNo:	1261600		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	96.5	50	150			
Nickel	ND	0.010	0.005000	0	106	50	150			
Zinc	ND	0.010	0.005000	0	101	50	150			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29771		SampType: MBLK		TestCode: EPA 200.8: Metals						
Client ID:	PBW		Batch ID: 29771		RunNo: 40219						
Prep Date:	1/18/2017		Analysis Date: 1/23/2017		SeqNo: 1260980		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	ND	0.0010									
Arsenic	ND	0.0010									
Copper	ND	0.0010									
Lead	ND	0.00050									
Selenium	ND	0.0010									
Thallium	ND	0.00050									

Sample ID	MSLCS-29771		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: 29771		RunNo: 40219					
Prep Date:	1/18/2017		Analysis Date: 1/23/2017		SeqNo: 1260982		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	106	85	115			
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Copper	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			
Thallium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID	MSLCSLL-29771		SampType: LCSLL		TestCode: EPA 200.8: Metals					
Client ID:	BatchQC		Batch ID: 29771		RunNo: 40219					
Prep Date:	1/18/2017		Analysis Date: 1/23/2017		SeqNo: 1260984		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010	0.001000	0	63.2	50	150			
Arsenic	0.0011	0.0010	0.001000	0	114	50	150			
Copper	ND	0.0010	0.001000	0	63.8	50	150			
Lead	ND	0.00050	0.0005000	0	97.0	50	150			
Selenium	0.0010	0.0010	0.001000	0	102	50	150			
Thallium	0.00050	0.00050	0.0005000	0	101	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	MB-29703	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	29703	RunNo:	40075					
Prep Date:	1/16/2017	Analysis Date:	1/17/2017	SeqNo:	1256132	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-29703	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	29703	RunNo:	40075					
Prep Date:	1/16/2017	Analysis Date:	1/17/2017	SeqNo:	1256133	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A40102	RunNo:	40102					
Prep Date:		Analysis Date:	1/18/2017	SeqNo:	1257097	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A40102	RunNo:	40102					
Prep Date:		Analysis Date:	1/18/2017	SeqNo:	1257098	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.1	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			
Phosphorus, Orthophosphate (As P)	5.0	0.50	5.000	0	100	90	110			

Sample ID	MB	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R40195	RunNo:	40195					
Prep Date:		Analysis Date:	1/20/2017	SeqNo:	1260294	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R40195	RunNo:	40195					
Prep Date:		Analysis Date:	1/20/2017	SeqNo:	1260295	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.5	90	110			
Bromide	2.4	0.10	2.500	0	97.8	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	97.0	90	110			
Sulfate	9.7	0.50	10.00	0	97.3	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.4	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R40241	RunNo:	40241					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1261862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R40241			RunNo: 40241						
Prep Date:		Analysis Date: 1/24/2017			SeqNo: 1261862		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		ND	0.10								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R40241			RunNo: 40241						
Prep Date:		Analysis Date: 1/24/2017			SeqNo: 1261863		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.50	0.10	0.5000	0	99.0	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B40014			RunNo: 40014					
Prep Date:		Analysis Date: 1/13/2017			SeqNo: 1254018		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.0	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	rb1	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: B40014			RunNo: 40014					
Prep Date:		Analysis Date: 1/13/2017			SeqNo: 1254019		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B40014	RunNo:	40014					
Prep Date:		Analysis Date:	1/13/2017	SeqNo:	1254019	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- P Analyte detected below quantitation limits
- J Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B40014	RunNo:	40014					
Prep Date:		Analysis Date:	1/13/2017	SeqNo:	1254019	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.2	70	130			
Surr: Toluene-d8	9.8		10.00		98.5	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	Ics-29754		SampType: LCS			TestCode: EPA Method 8270C: PAHs				
Client ID:	LCSW		Batch ID: 29754			RunNo: 40147				
Prep Date:	1/18/2017		Analysis Date: 1/19/2017			SeqNo: 1258606 Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	14	0.50	20.00	0	69.6	37.4	120			
1-Methylnaphthalene	14	0.50	20.00	0	67.9	39.3	121			
2-Methylnaphthalene	14	0.50	20.00	0	68.4	37.8	122			
Acenaphthylene	15	0.50	20.00	0	73.4	37	124			
Acenaphthene	16	0.50	20.00	0	78.1	35.6	123			
Fluorene	16	0.50	20.00	0	82.4	35.2	122			
Phenanthrene	16	0.50	20.00	0	81.2	38.8	122			
Anthracene	16	0.50	20.00	0	79.2	37.5	125			
Fluoranthene	16	0.50	20.00	0	80.3	37.4	131			
Pyrene	16	0.50	20.00	0	82.1	27.5	140			
Benz(a)anthracene	17	0.50	20.00	0	86.4	25.4	141			
Chrysene	16	0.50	20.00	0	81.4	33.6	155			
Benzo(b)fluoranthene	18	0.50	20.00	0	88.4	39	153			
Benzo(k)fluoranthene	16	0.50	20.00	0	80.4	38	154			
Benzo(a)pyrene	17	0.50	20.00	0	85.1	38.6	153			
Dibenz(a,h)anthracene	17	0.50	20.00	0	86.8	39.7	155			
Benzo(g,h,i)perylene	16	0.50	20.00	0	81.1	39.6	154			
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	86.3	19.1	153			
Surr: N-hexadecane	67		87.60		76.9	15	176			
Surr: Benzo(e)pyrene	16		20.00		80.4	15	198			

Sample ID	Icsd-29754		SampType: LCSD			TestCode: EPA Method 8270C: PAHs				
Client ID:	LCSS02		Batch ID: 29754			RunNo: 40147				
Prep Date:	1/18/2017		Analysis Date: 1/19/2017			SeqNo: 1258607 Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	13	0.50	20.00	0	64.4	37.4	120	7.76	20	
1-Methylnaphthalene	13	0.50	20.00	0	67.1	39.3	121	1.19	26.8	
2-Methylnaphthalene	14	0.50	20.00	0	70.0	37.8	122	2.31	23.8	
Acenaphthylene	14	0.50	20.00	0	68.9	37	124	6.32	28.6	
Acenaphthene	15	0.50	20.00	0	75.0	35.6	123	4.05	27	
Fluorene	16	0.50	20.00	0	79.3	35.2	122	3.83	25.7	
Phenanthrene	17	0.50	20.00	0	84.3	38.8	122	3.75	20	
Anthracene	17	0.50	20.00	0	82.9	37.5	125	4.57	21.2	
Fluoranthene	18	0.50	20.00	0	88.8	37.4	131	10.1	21.8	
Pyrene	17	0.50	20.00	0	86.8	27.5	140	5.57	31.1	
Benz(a)anthracene	18	0.50	20.00	0	88.5	25.4	141	2.40	26.6	
Chrysene	17	0.50	20.00	0	86.9	33.6	155	6.54	21.2	
Benzo(b)fluoranthene	17	0.50	20.00	0	85.4	39	153	3.45	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	lcsl-29754		SampType: LCSD		TestCode: EPA Method 8270C: PAHs					
Client ID:	LCSS02		Batch ID: 29754		RunNo: 40147					
Prep Date:	1/18/2017		Analysis Date: 1/19/2017		SeqNo: 1258607		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	17	0.50	20.00	0	84.5	38	154	4.97	21	
Benzo(a)pyrene	17	0.50	20.00	0	85.0	38.6	153	0.118	24.8	
Dibenz(a,h)anthracene	18	0.50	20.00	0	90.4	39.7	155	4.06	26	
Benzo(g,h,i)perylene	17	0.50	20.00	0	85.4	39.6	154	5.17	20	
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	87.4	19.1	153	1.27	20	
Surr: N-hexadecane	63		87.60		71.6	15	176	0	0	
Surr: Benzo(e)pyrene	15		20.00		76.0	15	198	0	0	

Sample ID	mb-29754		SampType: MBLK		TestCode: EPA Method 8270C: PAHs					
Client ID:	PBW		Batch ID: 29754		RunNo: 40147					
Prep Date:	1/18/2017		Analysis Date: 1/19/2017		SeqNo: 1258608		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.50								
1-Methylnaphthalene	ND	0.50								
2-Methylnaphthalene	ND	0.50								
Acenaphthylene	ND	0.50								
Acenaphthene	ND	0.50								
Fluorene	ND	0.50								
Phenanthrene	ND	0.50								
Anthracene	ND	0.50								
Fluoranthene	ND	0.50								
Pyrene	ND	0.50								
Benz(a)anthracene	ND	0.50								
Chrysene	ND	0.50								
Benzo(b)fluoranthene	ND	0.50								
Benzo(k)fluoranthene	ND	0.50								
Benzo(a)pyrene	ND	0.50								
Dibenz(a,h)anthracene	ND	0.50								
Benzo(g,h,i)perylene	ND	0.50								
Indeno(1,2,3-cd)pyrene	ND	0.50								
Surr: N-hexadecane	69		87.60		78.4	15	176			
Surr: Benzo(e)pyrene	14		20.00		68.6	15	198			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	1701540-001b dup	SampType:	dup	TestCode:	SM2510B: Specific Conductance					
Client ID:	GBR-17	Batch ID:	R40056	RunNo:	40056					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1255316	Units:	µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	2300	1.0						0.171	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID		1701540-001b dup		SampType: dup		TestCode: SM4500-H+B: pH				
Client ID:		GBR-17		Batch ID: R40056		RunNo: 40056				
Prep Date:				Analysis Date: 1/16/2017		SeqNo: 1255336		Units: pH units		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.33	1.68								H

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	mb-1	SampType:	mbk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R40056	RunNo:	40056					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1255292	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R40056	RunNo:	40056					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1255293	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.68	20.00	80.00	0	97.1	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701540

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29736	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	29736	RunNo:	40117					
Prep Date:	1/17/2017	Analysis Date:	1/18/2017	SeqNo:	1257458	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-29736	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	29736	RunNo:	40117					
Prep Date:	1/17/2017	Analysis Date:	1/18/2017	SeqNo:	1257459	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Sample ID	1701540-003BMS	SampType:	MS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	GBR-32	Batch ID:	29736	RunNo:	40117					
Prep Date:	1/17/2017	Analysis Date:	1/18/2017	SeqNo:	1257468	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	8560	100	5000	3495	101	80	120			D

Sample ID	1701540-003BMDS	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	GBR-32	Batch ID:	29736	RunNo:	40117					
Prep Date:	1/17/2017	Analysis Date:	1/18/2017	SeqNo:	1257469	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	8420	100	5000	3495	98.6	80	120	1.53	5	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
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 Southw

Work Order Number: 1701540

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

1/13/2017 7:20:00 AM

Completed By: Lindsay Mangin

1/13/2017 9:12:44 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved bottles checked for pH: 15
(<2 or >12 unless noted)
Adjusted? No
Checked by: RL

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

ient: Water Refining
Kelley Robinson
ailing Address: 111 CR 4990
Pleasantfield, NM
Phone #: 505-821-5616
Mail or Fax#: Kelley.robinson@wnr.com
VQC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
NELAP ☐ Other _____
EDD (Type)

☒ Standard ☐ Rush

GBR Annual Sampling
Project #: 12615518 → western P.O.

Devin Hernandez

Sampler: Josh Adams

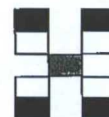
On Ice: ☒ Yes ☐ No

Sample Temperature: 21

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
12-17	1649	JL Adams	Christa White	1/2/17	1649
ate:	Time:	Relinquished by:	Received by:	Date	Time
4-7	1812	Christa White	Star	01/13/17	0720

Remarks: cc: dhonemann@ltenv.com
j.adams@ltenv.com
kelly.robinson@wnr.com
direct bill western PO



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

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.

**GIANT BLOOMFIELD REFINERY
WESTERN REFINING
ATTACHMENT TO COC**

SAMPLING CONDUCTED ON _____ BY _____

Sample ID	ANNUALLY (OCT)
System Influent	VOC
	GWC
System Effluent	VOC
	GWC
	METALS
	PAH
GBR-3	VOC
	GWC
	PAH
GBR-4	VOC
	GWC
	PAH
GBR-17	VOC
	GWC
	PAH
GBR-20	VOC
	GWC
	PAH
GBR-21	VOC
	GWC
	PAH
GBR-22	VOC
	GWC
	PAH
GBR-32	VOC
	GWC
	METALS
GBR-48	VOC
	GWC
	METALS
GBR-49	VOC
	GWC
	METALS
GBR-50	VOC
	GWC
	METALS
GBR-51	VOC
	GWC
GBR-52	VOC
	GWC
GBR-53	VOC
	GWC

Analysis	method	Bottle
VOC	method 8260	3 - HCL VOA

PAH	method 8270	1 - Liter Amber (non preserved)
-----	-------------	---------------------------------

GWC		
pH	SM 4500-H+B	1 - 500ml (non preserved)
EC	SM 2510B	
TDS	SM 2540C MOD	
alkalinity	SM 2320B	
hardness	SM 2340B	
ANIONS	EPA Method 300.0	1 - 250ml H2SO4
	nitrate/nitrite	
	bromide	1 - 500ml HNO3
	chloride	
	sulfate	
	phosphorus	
	fluoride	
CATIONS / METALS	EPA Method 200.7	1 - 500ml HNO3
	calcium	
	iron	
	magnesium	
	manganese	
	potassium	
	sodium	
Metals	EPA Method 200.7	1 - 500ml HNO3
	barium	
	beryllium	
	cadmium	
	chromium	
	silver	
	lead	
	nickel	
	EPA 200.8	
	copper	
	zinc	
	antimony	
	arsenic	
	selenium	
	thallium	
	EPA Method 245.1	
	mercury	

VOC x 15
GWC x 15
metals x 5
PAH x 7





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 26, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX

RE: GBR Annual Sampling

OrderNo.: 1701465

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/12/2017 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1701465

Date Reported: 1/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-52

Project: GBR Annual Sampling

Collection Date: 1/11/2017 2:15:00 PM

Lab ID: 1701465-001

Matrix: AQUEOUS

Received Date: 1/12/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: TES
Hardness (As CaCO ₃)	1200	6.6		mg/L	1	1/20/2017	R40177
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.78	0.10		mg/L	1	1/12/2017 6:49:18 PM	R39992
Chloride	58	10		mg/L	20	1/12/2017 7:01:43 PM	R39992
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	1/12/2017 6:49:18 PM	R39992
Bromide	0.32	0.10		mg/L	1	1/12/2017 6:49:18 PM	R39992
Nitrogen, Nitrate (As N)	7.3	0.10		mg/L	1	1/12/2017 6:49:18 PM	R39992
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	1/12/2017 7:01:43 PM	R39992
Sulfate	1400	25	*	mg/L	50	1/17/2017 3:55:07 AM	R40059
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2900	1.0		µmhos/cm	1	1/12/2017 3:59:15 PM	R39993
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	208.5	20.00		mg/L CaCO ₃	1	1/12/2017 3:59:15 PM	R39993
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/12/2017 3:59:15 PM	R39993
Total Alkalinity (as CaCO ₃)	208.5	20.00		mg/L CaCO ₃	1	1/12/2017 3:59:15 PM	R39993
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2540	100	*D	mg/L	1	1/13/2017 6:52:00 PM	29665
SM4500-H+B: PH							Analyst: JRR
pH	7.40	1.68	H	pH units	1	1/12/2017 3:59:15 PM	R39993
EPA METHOD 200.7: METALS							Analyst: TES
Calcium	430	10		mg/L	10	1/20/2017 8:12:34 PM	29771
Iron	18	1.0	*	mg/L	50	1/24/2017 7:55:01 AM	29771
Magnesium	36	1.0		mg/L	1	1/20/2017 8:10:55 PM	29771
Manganese	0.46	0.0020	*	mg/L	1	1/20/2017 8:10:55 PM	29771
Potassium	3.1	1.0		mg/L	1	1/20/2017 8:10:55 PM	29771
Sodium	290	10		mg/L	10	1/20/2017 8:12:34 PM	29771
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Toluene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Ethylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Naphthalene	ND	2.0		µg/L	1	1/13/2017 1:04:00 PM	R40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701465

Date Reported: 1/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-52

Project: GBR Annual Sampling

Collection Date: 1/11/2017 2:15:00 PM

Lab ID: 1701465-001

Matrix: AQUEOUS

Received Date: 1/12/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1-Methylnaphthalene	ND	4.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Acetone	ND	10		µg/L	1	1/13/2017 1:04:00 PM	R40014
Bromobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Bromodichloromethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Bromoform	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Bromomethane	ND	3.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
2-Butanone	ND	10		µg/L	1	1/13/2017 1:04:00 PM	R40014
Carbon disulfide	ND	10		µg/L	1	1/13/2017 1:04:00 PM	R40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Chlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Chloroethane	ND	2.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Chloroform	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Chloromethane	ND	3.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Dibromochloromethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Dibromomethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
2-Hexanone	ND	10		µg/L	1	1/13/2017 1:04:00 PM	R40014
Isopropylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/13/2017 1:04:00 PM	R40014
Methylene Chloride	ND	3.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
n-Butylbenzene	ND	3.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
n-Propylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701465

Date Reported: 1/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-52

Project: GBR Annual Sampling

Collection Date: 1/11/2017 2:15:00 PM

Lab ID: 1701465-001

Matrix: AQUEOUS

Received Date: 1/12/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
sec-Butylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Styrene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Trichlorofluoromethane	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Vinyl chloride	ND	1.0		µg/L	1	1/13/2017 1:04:00 PM	R40014
Xylenes, Total	ND	1.5		µg/L	1	1/13/2017 1:04:00 PM	R40014
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	1/13/2017 1:04:00 PM	R40014
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	1/13/2017 1:04:00 PM	R40014
Surr: Dibromofluoromethane	102	70-130		%Rec	1	1/13/2017 1:04:00 PM	R40014
Surr: Toluene-d8	101	70-130		%Rec	1	1/13/2017 1:04:00 PM	R40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701465

Date Reported: 1/26/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-51

Project: GBR Annual Sampling

Collection Date: 1/11/2017 4:07:00 PM

Lab ID: 1701465-002

Matrix: AQUEOUS

Received Date: 1/12/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: TES
Hardness (As CaCO ₃)	850	6.6		mg/L	1	1/20/2017	R40177
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.79	0.10		mg/L	1	1/12/2017 7:38:56 PM	R39992
Chloride	45	10		mg/L	20	1/12/2017 7:51:20 PM	R39992
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	1/12/2017 7:38:56 PM	R39992
Bromide	0.22	0.10		mg/L	1	1/12/2017 7:38:56 PM	R39992
Nitrogen, Nitrate (As N)	8.1	0.10		mg/L	1	1/12/2017 7:38:56 PM	R39992
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	1/12/2017 7:51:20 PM	R39992
Sulfate	990	25	*	mg/L	50	1/17/2017 4:07:32 AM	R40059
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2500	1.0		µmhos/cm	1	1/12/2017 4:19:40 PM	R39993
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	208.8	20.00		mg/L CaCO ₃	1	1/12/2017 4:19:40 PM	R39993
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/12/2017 4:19:40 PM	R39993
Total Alkalinity (as CaCO ₃)	208.8	20.00		mg/L CaCO ₃	1	1/12/2017 4:19:40 PM	R39993
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2080	40.0	*D	mg/L	1	1/13/2017 6:52:00 PM	29665
SM4500-H+B: PH							Analyst: JRR
pH	7.43	1.68	H	pH units	1	1/12/2017 4:19:40 PM	R39993
EPA METHOD 200.7: METALS							Analyst: TES
Calcium	300	10		mg/L	10	1/20/2017 8:25:13 PM	29771
Iron	9.1	0.20	*	mg/L	10	1/20/2017 8:25:13 PM	29771
Magnesium	25	1.0		mg/L	1	1/20/2017 8:14:42 PM	29771
Manganese	0.47	0.0020	*	mg/L	1	1/20/2017 8:14:42 PM	29771
Potassium	1.4	1.0		mg/L	1	1/20/2017 8:14:42 PM	29771
Sodium	250	10		mg/L	10	1/20/2017 8:25:13 PM	29771
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Toluene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Ethylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Naphthalene	ND	2.0		µg/L	1	1/13/2017 1:28:00 PM	R40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701465

Date Reported: 1/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-51

Project: GBR Annual Sampling

Collection Date: 1/11/2017 4:07:00 PM

Lab ID: 1701465-002

Matrix: AQUEOUS

Received Date: 1/12/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1-Methylnaphthalene	ND	4.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
2-Methylnaphthalene	ND	4.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Acetone	ND	10		µg/L	1	1/13/2017 1:28:00 PM	R40014
Bromobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Bromodichloromethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Bromoform	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Bromomethane	ND	3.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
2-Butanone	ND	10		µg/L	1	1/13/2017 1:28:00 PM	R40014
Carbon disulfide	ND	10		µg/L	1	1/13/2017 1:28:00 PM	R40014
Carbon Tetrachloride	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Chlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Chloroethane	ND	2.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Chloroform	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Chloromethane	ND	3.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
2-Chlorotoluene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
4-Chlorotoluene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
cis-1,2-DCE	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Dibromochloromethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Dibromomethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1-Dichloroethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1-Dichloroethene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2-Dichloropropane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,3-Dichloropropane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
2,2-Dichloropropane	ND	2.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1-Dichloropropene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Hexachlorobutadiene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
2-Hexanone	ND	10		µg/L	1	1/13/2017 1:28:00 PM	R40014
Isopropylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
4-Isopropyltoluene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
4-Methyl-2-pentanone	ND	10		µg/L	1	1/13/2017 1:28:00 PM	R40014
Methylene Chloride	ND	3.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
n-Butylbenzene	ND	3.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
n-Propylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701465

Date Reported: 1/26/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-51

Project: GBR Annual Sampling

Collection Date: 1/11/2017 4:07:00 PM

Lab ID: 1701465-002

Matrix: AQUEOUS

Received Date: 1/12/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
sec-Butylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Styrene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
tert-Butylbenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
trans-1,2-DCE	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Trichlorofluoromethane	8.6	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Vinyl chloride	ND	1.0		µg/L	1	1/13/2017 1:28:00 PM	R40014
Xylenes, Total	ND	1.5		µg/L	1	1/13/2017 1:28:00 PM	R40014
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	1/13/2017 1:28:00 PM	R40014
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/13/2017 1:28:00 PM	R40014
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	1/13/2017 1:28:00 PM	R40014
Surr: Toluene-d8	99.3	70-130		%Rec	1	1/13/2017 1:28:00 PM	R40014

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29771		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 29771		RunNo: 40177					
Prep Date:	1/18/2017		Analysis Date: 1/20/2017		SeqNo: 1259557		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCSLL-29771		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: 29771		RunNo: 40177					
Prep Date:	1/18/2017		Analysis Date: 1/20/2017		SeqNo: 1259643		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	93.6	50	150			
Iron	0.023	0.020	0.02000	0	115	50	150			
Magnesium	ND	1.0	0.5000	0	100	50	150			
Manganese	ND	0.0020	0.002000	0	98.0	50	150			
Potassium	ND	1.0	0.5000	0	64.7	50	150			
Sodium	ND	1.0	0.5000	0	83.7	50	150			

Sample ID	LCS-29771		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 29771		RunNo: 40177					
Prep Date:	1/18/2017		Analysis Date: 1/20/2017		SeqNo: 1259644		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	96.5	85	115			
Iron	0.47	0.020	0.5000	0	93.0	85	115			
Magnesium	48	1.0	50.00	0	96.9	85	115			
Manganese	0.46	0.0020	0.5000	0	91.4	85	115			
Potassium	47	1.0	50.00	0	93.1	85	115			
Sodium	47	1.0	50.00	0	93.2	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R39992			RunNo: 39992						
Prep Date:		Analysis Date: 1/12/2017			SeqNo: 1253178		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	ND	0.10
Chloride	ND	0.50
Nitrogen, Nitrite (As N)	ND	0.10
Bromide	ND	0.10
Nitrogen, Nitrate (As N)	ND	0.10
Phosphorus, Orthophosphate (As P)	ND	0.50

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID:	R39992	RunNo:	39992						
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253179	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.51	0.10	0.5000	0	101	90	110
Chloride	4.8	0.50	5.000	0	96.6	90	110
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.8	90	110
Bromide	2.5	0.10	2.500	0	98.0	90	110
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.3	90	110

Sample ID	MB	SampType: mblk			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R40059			RunNo: 40059						
Prep Date:		Analysis Date: 1/16/2017			SeqNo: 1255476		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	ND	0.50
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Sample ID	LCS	SampType: lcs			TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R40059			RunNo: 40059						
Prep Date:		Analysis Date: 1/16/2017			SeqNo: 1255477		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	9.8	0.50	10.00	0	98.0	90	110
---------	-----	------	-------	---	------	----	-----

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R40014			RunNo: 40014					
Prep Date:		Analysis Date: 1/13/2017			SeqNo: 1253945		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.4	70	130			
Toluene	20	1.0	20.00	0	98.7	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.0	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.0	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R40014			RunNo: 40014					
Prep Date:		Analysis Date: 1/13/2017			SeqNo: 1253946		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType: MBLK	TestCode: EPA Method 8260B: VOLATILES							
Client ID:	PBW	Batch ID: R40014	RunNo: 40014							
Prep Date:		Analysis Date: 1/13/2017	SeqNo: 1253946 Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R40014			RunNo: 40014					
Prep Date:		Analysis Date: 1/13/2017			SeqNo: 1253946		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		99.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130			
Surr: Toluene-d8	9.9		10.00		99.0	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	mb-1		SampType: mblk		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R39993		RunNo: 39993					
Prep Date:			Analysis Date: 1/12/2017		SeqNo: 1253315		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1		SampType: lcs		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R39993		RunNo: 39993					
Prep Date:			Analysis Date: 1/12/2017		SeqNo: 1253316		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.80	20.00	80.00	0	97.3	90	110			

Sample ID	1701465-002bms			SampType:	ms		TestCode:	SM2320B: Alkalinity			
Client ID:	GBR-51			Batch ID:	R39993		RunNo:	39993			
Prep Date:				Analysis Date:	1/12/2017		SeqNo:	1253319		Units: mg/L CaCO3	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	253.2	20.00	80.00	208.8	55.4	19.8	126				

Sample ID	1701465-002bmsd		SampType: msd		TestCode: SM2320B: Alkalinity					
Client ID:	GBR-51		Batch ID: R39993		RunNo: 39993					
Prep Date:			Analysis Date: 1/12/2017		SeqNo: 1253320		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	250.5	20.00	80.00	208.8	52.1	19.8	126	1.06	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701465

26-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29665		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	29665		RunNo:	40008				
Prep Date:	1/12/2017		Analysis Date:	1/13/2017		SeqNo:	1253638		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-29665		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 29665		RunNo: 40008					
Prep Date:	1/12/2017		Analysis Date: 1/13/2017		SeqNo: 1253639		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



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 Southw

Work Order Number: 1701465

RcptNo: 1

Received by/date:

AS

01/12/17

Logged By: Lindsay Mangin

1/12/2017 7:00:00 AM

Completed By: Lindsay Mangin

1/12/2017 9:21:45 AM

Reviewed By:

Ra 01/12/17

Chain of Custody

- | | | | |
|--|---------|----|---------------|
| 1. Custody seals intact on sample bottles? | Yes | No | Not Present ✓ |
| 2. Is Chain of Custody complete? | Yes ✓ | No | Not Present |
| 3. How was the sample delivered? | Courier | | |

Log In

- | | | | |
|---|-------|------|--|
| 4. Was an attempt made to cool the samples? | Yes ✓ | No | NA |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ✓ | No | NA |
| 6. Sample(s) in proper container(s)? | Yes ✓ | No | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ✓ | No | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ✓ | No | |
| 9. Was preservative added to bottles? | Yes | No ✓ | NA |
| 10. VOA vials have zero headspace? | Yes ✓ | No | No VOA Vials |
| 11. Were any sample containers received broken? | Yes | No ✓ | |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes ✓ | No | # of preserved bottles checked for pH: 6
(≤2 or >12 unless noted) |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ✓ | No | Adjusted? NO |
| 14. Is it clear what analyses were requested? | Yes ✓ | No | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes ✓ | No | Checked by: [Signature] |

Special Handling (if applicable)

- | | | | |
|---|-----|----|------|
| 16. Was client notified of all discrepancies with this order? | Yes | No | NA ✓ |
|---|-----|----|------|

Person Notified:

Date:

By Whom:

Via:

eMail

Phone

Fax

In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Client: Western Refining
Kelly Robinson
Mailing Address: 111 CR 4790
Bloomfield, NM
Phone #: 505-801-5616
email or Fax#: kelly.robinson@wdr.com
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

☒ Standard ☐ Rush

Project Name:

Project #:

Project Manager:

Sampler: Josh Adams / Devin Henneman

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.00°C

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
-11/17	1753	<i>[Signature]</i>	<i>[Signature]</i>	11/17	1753
Date:	Time:	Relinquished by:	Received by:	Date	Time
11/17	1804	<i>[Signature]</i>	<i>[Signature]</i>	11/17	0700



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Remarks: CC: d.haxemann@itenv.com
: jadams@itenv.com
Kelly.Robinson@unf.com
d.rattall@clerk

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.

**GIANT BLOOMFIELD REFINERY
WESTERN REFINING
ATTACHMENT TO COC**

SAMPLING CONDUCTED ON

1-18-2017

BY

SA/DH

Sample ID	ANNUALLY (DEC)
GBR-3	VOC
	GWC
	PAH
2GBR-4	VOC
	GWC
	PAH
GBR-17	VOC
	GWC
	PAH
GBR-24B	VOC
	GWC
	PAH
GBR-30	VOC
	GWC
	PAH
GBR-31	VOC
	GWC
	PAH
GBR-52	VOC
	GWC
	METALS
GBR-48	VOC
	GWC
	METALS
GBR-49	VOC
	GWC
	METALS
GBR-50	VOC
	GWC
	METALS
GBR-51	VOC
	GWC
GBR-52	VOC
	GWC
SHS-1	VOC
	GWC

Analysis	method	Bottle
VOC	method 8260	3 - HCL VOA

PAH	method 8270	1 - Liter Amber (non preserved)
-----	-------------	---------------------------------

GWC		
pH	SM 4500-H+B	1 - 500ml (non preserved)
EC	SM 2510B	
TDS	SM 2540C MOD	
alkalinity	SM 2320B	
hardness	SM 2340B	1 - 250ml H2SO4
ANIONS	EPA Method 300.0	
	nitrate/nitrite	
	bromide	
	chloride	
	sulfate	
	phosphorus	
CATIONS / METALS	fluoride	1 - 500ml HNO3
	EPA Method 200.7	
	calcium	
	iron	
	magnesium	
	manganese	
Metals	potassium	1 - 500ml HNO3
	sodium	
	EPA Method 200.7	
	barium	
	beryllium	
	cadmium	
	chromium	
	silver	
	lead	
	nickel	
	EPA 200.8	
	copper	
	zinc	
	antimony	
	arsenic	
	selenium	
	thallium	
	EPA Method 245.1	
	mercury	



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 31, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: GBR Annual Sampling

OrderNo.: 1701641

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/17/2017 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701641

Date Reported: 1/31/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GRW-6

Project: GBR Annual Sampling

Collection Date: 1/16/2017 1:30:00 PM

Lab ID: 1701641-001

Matrix: AQUEOUS

Received Date: 1/17/2017 7:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO ₃)	1100	6.6		mg/L	1	1/27/2017	R40343
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	1.1	0.10		mg/L	1	1/17/2017 3:52:05 PM	R40102
Chloride	89	10		mg/L	20	1/17/2017 4:04:30 PM	R40102
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	1/17/2017 3:52:05 PM	R40102
Bromide	0.34	0.10		mg/L	1	1/17/2017 3:52:05 PM	R40102
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	1/17/2017 3:52:05 PM	R40102
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	1/17/2017 3:52:05 PM	R40102
Sulfate	1500	25	*	mg/L	50	1/19/2017 11:47:12 PM	A40163
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3100	1.0		µmhos/cm	1	1/19/2017 3:10:37 PM	R40164
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	364.3	20.00		mg/L CaCO ₃	1	1/19/2017 3:10:37 PM	R40164
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	1/19/2017 3:10:37 PM	R40164
Total Alkalinity (as CaCO ₃)	364.3	20.00		mg/L CaCO ₃	1	1/19/2017 3:10:37 PM	R40164
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2580	100	*	mg/L	1	1/20/2017 4:35:00 PM	29789
SM4500-H+B: PH							Analyst: JRR
pH	7.00	1.68	H	pH units	1	1/19/2017 3:10:37 PM	R40164
EPA METHOD 200.7: METALS							Analyst: MED
Calcium	340	5.0		mg/L	5	1/27/2017 12:22:47 PM	29914
Iron	11	1.0	*	mg/L	50	1/30/2017 3:32:44 PM	29914
Magnesium	57	1.0		mg/L	1	1/27/2017 12:20:59 PM	29914
Manganese	17	0.10	*	mg/L	50	1/30/2017 3:32:44 PM	29914
Potassium	2.3	1.0		mg/L	1	1/27/2017 12:20:59 PM	29914
Sodium	390	5.0		mg/L	5	1/27/2017 12:22:47 PM	29914
EPA METHOD 8270C: PAHS							Analyst: DAM
Naphthalene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
1-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
2-Methylnaphthalene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Acenaphthylene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Acenaphthene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Fluorene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Phenanthrene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Anthracene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Fluoranthene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701641

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GRW-6

Project: GBR Annual Sampling

Collection Date: 1/16/2017 1:30:00 PM

Lab ID: 1701641-001

Matrix: AQUEOUS

Received Date: 1/17/2017 7:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: PAHS							Analyst: DAM
Pyrene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Benz(a)anthracene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Chrysene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Benzo(b)fluoranthene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Benzo(k)fluoranthene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Benzo(a)pyrene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Dibenz(a,h)anthracene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Benzo(g,h,i)perylene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Indeno(1,2,3-cd)pyrene	ND	0.50		µg/L	1	1/19/2017 4:22:43 PM	29754
Surr: N-hexadecane	59.0	15-176		%Rec	1	1/19/2017 4:22:43 PM	29754
Surr: Benzo(e)pyrene	60.0	15-198		%Rec	1	1/19/2017 4:22:43 PM	29754
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Toluene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Ethylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Naphthalene	ND	2.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
2-Methylnaphthalene	ND	4.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Acetone	ND	10		µg/L	1	1/17/2017 1:54:00 PM	R40055
Bromobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Bromodichloromethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Bromoform	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Bromomethane	ND	3.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
2-Butanone	ND	10		µg/L	1	1/17/2017 1:54:00 PM	R40055
Carbon disulfide	ND	10		µg/L	1	1/17/2017 1:54:00 PM	R40055
Carbon Tetrachloride	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Chlorobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Chloroethane	ND	2.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Chloroform	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Chloromethane	ND	3.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
2-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
4-Chlorotoluene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
cis-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055

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Project: GBR Annual Sampling

Collection Date: 1/16/2017 1:30:00 PM

Lab ID: 1701641-001

Matrix: AQUEOUS

Received Date: 1/17/2017 7:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Dibromochloromethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Dibromomethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1-Dichloroethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1-Dichloroethene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,3-Dichloropropane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
2,2-Dichloropropane	ND	2.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Hexachlorobutadiene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
2-Hexanone	ND	10		µg/L	1	1/17/2017 1:54:00 PM	R40055
Isopropylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
4-Isopropyltoluene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
4-Methyl-2-pentanone	ND	10		µg/L	1	1/17/2017 1:54:00 PM	R40055
Methylene Chloride	ND	3.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
n-Butylbenzene	ND	3.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
n-Propylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
sec-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Styrene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
tert-Butylbenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
trans-1,2-DCE	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Trichlorofluoromethane	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Vinyl chloride	ND	1.0		µg/L	1	1/17/2017 1:54:00 PM	R40055
Xylenes, Total	ND	1.5		µg/L	1	1/17/2017 1:54:00 PM	R40055
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%Rec	1	1/17/2017 1:54:00 PM	R40055

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	1/17/2017 1:54:00 PM	R40055
Surr: Dibromofluoromethane	97.9	70-130		%Rec	1	1/17/2017 1:54:00 PM	R40055
Surr: Toluene-d8	97.4	70-130		%Rec	1	1/17/2017 1:54:00 PM	R40055

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29914		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 29914		RunNo: 40343					
Prep Date:	1/26/2017		Analysis Date: 1/27/2017		SeqNo: 1264578		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-29914		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 29914		RunNo: 40343					
Prep Date:	1/26/2017		Analysis Date: 1/27/2017		SeqNo: 1264579		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.3	85	115			
Iron	0.50	0.020	0.5000	0	99.2	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	95.0	85	115			
Potassium	49	1.0	50.00	0	98.5	85	115			
Sodium	50	1.0	50.00	0	99.4	85	115			

Sample ID	LCSLL-29914		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: 29914		RunNo: 40343					
Prep Date:	1/26/2017		Analysis Date: 1/27/2017		SeqNo: 1264583		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	104	50	150			
Iron	0.027	0.020	0.02000	0	135	50	150			
Magnesium	ND	1.0	0.5000	0	108	50	150			
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Potassium	ND	1.0	0.5000	0	120	50	150			
Sodium	ND	1.0	0.5000	0	123	50	150			

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.
Project: GBR Annual Sampling

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R40102		RunNo: 40102							
Prep Date:	Analysis Date: 1/17/2017		SeqNo: 1257043		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R40102		RunNo: 40102							
Prep Date:	Analysis Date: 1/17/2017		SeqNo: 1257044		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.9	0.50	5.000	0	97.8	90	110			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.9	90	110			
Bromide	2.5	0.10	2.500	0	98.9	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	97.9	90	110			

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A40163		RunNo: 40163							
Prep Date:	Analysis Date: 1/19/2017		SeqNo: 1258986		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A40163		RunNo: 40163							
Prep Date:	Analysis Date: 1/19/2017		SeqNo: 1258987		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.6	0.50	10.00	0	96.3	90	110			

Qualifiers:

- | | |
|---|---|
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QC SUMMARY REPORT

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WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R40055			RunNo: 40055					
Prep Date:		Analysis Date: 1/17/2017			SeqNo: 1255558		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.6	70	130			
Toluene	20	1.0	20.00	0	100	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	92.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.7	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.8	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R40055			RunNo: 40055					
Prep Date:		Analysis Date: 1/17/2017			SeqNo: 1255559		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R40055			RunNo: 40055					
Prep Date:		Analysis Date: 1/17/2017			SeqNo: 1255559		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R40055			RunNo: 40055						
Prep Date:		Analysis Date: 1/17/2017			SeqNo: 1255559		Units: µg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride		ND	1.0								
Xylenes, Total		ND	1.5								
Surr: 1,2-Dichloroethane-d4		9.5		10.00		95.1	70	130			
Surr: 4-Bromofluorobenzene		9.9		10.00		99.5	70	130			
Surr: Dibromofluoromethane		9.6		10.00		95.9	70	130			
Surr: Toluene-d8		9.8		10.00		98.2	70	130			

Sample ID	1701641-001ams	SampType: MS		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	GRW-6	Batch ID: R40055		RunNo: 40055						
Prep Date:	Analysis Date: 1/17/2017		SeqNo: 1256271		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.0	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.8	70	130			
Surr: Toluene-d8	9.9		10.00		98.6	70	130			

Sample ID	1701641-001amsd	SampType: MSD		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	GRW-6	Batch ID: R40055		RunNo: 40055						
Prep Date:	Analysis Date: 1/17/2017		SeqNo: 1256273		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.8	70	130	2.24	20	
Toluene	19	1.0	20.00	0	96.1	70	130	3.64	20	
Chlorobenzene	20	1.0	20.00	0	97.5	70	130	3.89	20	
1,1-Dichloroethene	19	1.0	20.00	0	96.6	70	130	4.62	20	
Trichloroethene (TCE)	18	1.0	20.00	0	89.4	70	130	3.85	20	
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130	0	0	
Surr: Dibromofluoromethane	9.6		10.00		96.2	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		97.6	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	lcs-29754		SampType:	LCS		TestCode:	EPA Method 8270C: PAHs			
Client ID:	LCSW		Batch ID:	29754		RunNo:	40147			
Prep Date:	1/18/2017		Analysis Date:	1/19/2017		SeqNo:	1258606		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	14	0.50	20.00	0	69.6	37.4	120			
1-Methylnaphthalene	14	0.50	20.00	0	67.9	39.3	121			
2-Methylnaphthalene	14	0.50	20.00	0	68.4	37.8	122			
Acenaphthylene	15	0.50	20.00	0	73.4	37	124			
Acenaphthene	16	0.50	20.00	0	78.1	35.6	123			
Fluorene	16	0.50	20.00	0	82.4	35.2	122			
Phenanthrene	16	0.50	20.00	0	81.2	38.8	122			
Anthracene	16	0.50	20.00	0	79.2	37.5	125			
Fluoranthene	16	0.50	20.00	0	80.3	37.4	131			
Pyrene	16	0.50	20.00	0	82.1	27.5	140			
Benz(a)anthracene	17	0.50	20.00	0	86.4	25.4	141			
Chrysene	16	0.50	20.00	0	81.4	33.6	155			
Benzo(b)fluoranthene	18	0.50	20.00	0	88.4	39	153			
Benzo(k)fluoranthene	16	0.50	20.00	0	80.4	38	154			
Benzo(a)pyrene	17	0.50	20.00	0	85.1	38.6	153			
Dibenz(a,h)anthracene	17	0.50	20.00	0	86.8	39.7	155			
Benzo(g,h,i)perylene	16	0.50	20.00	0	81.1	39.6	154			
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	86.3	19.1	153			
Surr: N-hexadecane	67		87.60		76.9	15	176			
Surr: Benzo(e)pyrene	16		20.00		80.4	15	198			

Sample ID	lcsd-29754		SampType:	LCSD		TestCode:	EPA Method 8270C: PAHs			
Client ID:	LCSS02		Batch ID:	29754		RunNo:	40147			
Prep Date:	1/18/2017		Analysis Date:	1/19/2017		SeqNo:	1258607		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	13	0.50	20.00	0	64.4	37.4	120	7.76	20	
1-Methylnaphthalene	13	0.50	20.00	0	67.1	39.3	121	1.19	26.8	
2-Methylnaphthalene	14	0.50	20.00	0	70.0	37.8	122	2.31	23.8	
Acenaphthylene	14	0.50	20.00	0	68.9	37	124	6.32	28.6	
Acenaphthene	15	0.50	20.00	0	75.0	35.6	123	4.05	27	
Fluorene	16	0.50	20.00	0	79.3	35.2	122	3.83	25.7	
Phenanthrene	17	0.50	20.00	0	84.3	38.8	122	3.75	20	
Anthracene	17	0.50	20.00	0	82.9	37.5	125	4.57	21.2	
Fluoranthene	18	0.50	20.00	0	88.8	37.4	131	10.1	21.8	
Pyrene	17	0.50	20.00	0	86.8	27.5	140	5.57	31.1	
Benz(a)anthracene	18	0.50	20.00	0	88.5	25.4	141	2.40	26.6	
Chrysene	17	0.50	20.00	0	86.9	33.6	155	6.54	21.2	
Benzo(b)fluoranthene	17	0.50	20.00	0	85.4	39	153	3.45	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	Icsd-29754		SampType: LCSD	TestCode: EPA Method 8270C: PAHs						
Client ID:	LCSS02		Batch ID: 29754	RunNo: 40147						
Prep Date:	1/18/2017		Analysis Date: 1/19/2017	SeqNo: 1258607		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	17	0.50	20.00	0	84.5	38	154	4.97	21	
Benzo(a)pyrene	17	0.50	20.00	0	85.0	38.6	153	0.118	24.8	
Dibenz(a,h)anthracene	18	0.50	20.00	0	90.4	39.7	155	4.06	26	
Benzo(g,h,i)perylene	17	0.50	20.00	0	85.4	39.6	154	5.17	20	
Indeno(1,2,3-cd)pyrene	17	0.50	20.00	0	87.4	19.1	153	1.27	20	
Surr: N-hexadecane	63		87.60		71.6	15	176	0	0	
Surr: Benzo(e)pyrene	15		20.00		76.0	15	198	0	0	

Sample ID	mb-29754		SampType: MBLK	TestCode: EPA Method 8270C: PAHs						
Client ID:	PBW		Batch ID: 29754	RunNo: 40147						
Prep Date:	1/18/2017		Analysis Date: 1/19/2017	SeqNo: 1258608		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.50								
1-Methylnaphthalene	ND	0.50								
2-Methylnaphthalene	ND	0.50								
Acenaphthylene	ND	0.50								
Acenaphthene	ND	0.50								
Fluorene	ND	0.50								
Phenanthrene	ND	0.50								
Anthracene	ND	0.50								
Fluoranthene	ND	0.50								
Pyrene	ND	0.50								
Benzo(a)anthracene	ND	0.50								
Chrysene	ND	0.50								
Benzo(b)fluoranthene	ND	0.50								
Benzo(k)fluoranthene	ND	0.50								
Benzo(a)pyrene	ND	0.50								
Dibenz(a,h)anthracene	ND	0.50								
Benzo(g,h,i)perylene	ND	0.50								
Indeno(1,2,3-cd)pyrene	ND	0.50								
Surr: N-hexadecane	69		87.60		78.4	15	176			
Surr: Benzo(e)pyrene	14		20.00		68.6	15	198			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	mb-1	SampType: mblk			TestCode: SM2320B: Alkalinity					
Client ID:	PBW	Batch ID: R40164			RunNo: 40164					
Prep Date:		Analysis Date: 1/19/2017			SeqNo: 1259028		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1		SampType: lcs		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R40164		RunNo: 40164					
Prep Date:			Analysis Date: 1/19/2017		SeqNo: 1259029		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.68	20.00	80.00	0	97.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701641

31-Jan-17

Client: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Sample ID	MB-29789	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	29789	RunNo:	40175					
Prep Date:	1/19/2017	Analysis Date:	1/20/2017	SeqNo:	1259296	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-29789	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	29789	RunNo:	40175					
Prep Date:	1/19/2017	Analysis Date:	1/20/2017	SeqNo:	1259297	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



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 Southw

Work Order Number: 1701641

RcptNo: 1

Received by/date: LM 11/7/17

Logged By: Lindsay Mangin 1/17/2017 7:05:00 AM

Completed By: Lindsay Mangin 1/17/2017 8:09:38 AM

Reviewed By: AS 11/7/17

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH: 2
(<2 or >12 unless noted)
Adjusted? NO
Checked by: La

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Client: Western Refining
Kelly Robinson
Billing Address: 111 GR 4990
Bloomfield, NM
Phone #: 505-801-5616
Email or Fax#: Kelly.robinson@wrf.com
A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

☒ **Standard** ☐ **Rush**

GBR annual sampling

Project #:	12615518 → western P.O.
------------	-------------------------

Project Manager:

Devin Hencman	
Sampler:	Josh Adams
On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Temperature:	1/4

☒ NELAP ☐ Other

EDD (Type)

[illegible]

Rate:	Time:	Relinquished by:	Received by:	Date	Time
5-17	1530	J. Carlos	Christine Webb	7/16/17	1645
Rate:	Time:	Relinquished by:	Received by:	Date	Time
4/17	1800			7/17/17	2030

[illegible]

Remarks: cc: dhencman@stent.com
jadams@stent.com
Kelly Robinson
direct bill western P.O.

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.

**GIANT BLOOMFIELD REFINERY
WESTERN REFINING
ATTACHMENT TO COC**

SAMPLING CONDUCTED ON _____ BY _____

Sample ID	ANNUALLY (DEC)
GRW-3	VOC
	GWC
	PAH
GRW-6	VOC
	GWC
	PAH
GBR-17	VOC
	GWC
	PAH
GBR-24D	VOC
	GWC
	PAH
GBR-30	VOC
	GWC
	PAH
GBR-31	VOC
	GWC
	PAH
GBR-32	VOC
	GWC
	METALS
GBR-48	VOC
	GWC
	METALS
GBR-49	VOC
	GWC
	METALS
GBR-50	VOC
	GWC
	METALS
GBR-51	VOC
	GWC
	GWC
GBR-52	VOC
	GWC
	GWC
SHS-8	VOC
	GWC
	GWC

Analysis	method	Bottle
VOC	method 8260	3 - HCL VOA

PAH	method 8270	1 - Liter Amber (non preserved)
-----	-------------	---------------------------------

GWC		
pH	SM 4500-H+B	1 - 500ml (non preserved)
EC	SM 2510B	
TDS	SM 2540C MOD	
alkalinity	SM 2320B	
hardness	SM 2340B	1 - 250ml H2SO4
ANIONS	EPA Method 300.0	
	nitrate/nitrite	
	bromide	
	chloride	
	sulfate	
	phosphorus	
CATIONS / METALS	fluoride	1 - 500ml HNO3
	EPA Method 200.7	
	calcium	
	iron	
	magnesium	
	manganese	
Metals	potassium	1 - 500ml HNO3
	sodium	
	EPA Method 200.7	
	barium	
	beryllium	
	cadmium	
	chromium	
	silver	
	lead	
	nickel	
	EPA 200.8	
	copper	
	zinc	
	antimony	
	arsenic	
	selenium	
	thallium	
	Epa Method 245.1	
	mercury	

12615518 on Lab COC





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 15, 2015

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX (505) 632-3911

RE: GBR Shutdown Action Plan

OrderNo.: 1508343

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/8/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Workorder Sample Summary

WO#: 1508343
15-Aug-15

CLIENT: Western Refining Southwest, Inc.
Project: GBR Shutdown Action Plan

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1508343-001	GBR-21D		8/7/2015 12:30:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-001	GBR-21D		8/7/2015 12:30:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-002	GBR-22		8/7/2015 11:35:00 AM	8/8/2015 9:45:00 AM	Aqueous
1508343-002	GBR-22		8/7/2015 11:35:00 AM	8/8/2015 9:45:00 AM	Aqueous
1508343-003	GBR-25		8/7/2015 12:23:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-003	GBR-25		8/7/2015 12:23:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-004	GBR-26		8/7/2015 1:25:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-004	GBR-26		8/7/2015 1:25:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-005	GBR-34		8/7/2015 11:30:00 AM	8/8/2015 9:45:00 AM	Aqueous
1508343-005	GBR-34		8/7/2015 11:30:00 AM	8/8/2015 9:45:00 AM	Aqueous
1508343-006	SHS-8		8/7/2015 3:10:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-006	SHS-8		8/7/2015 3:10:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-007	SHS-9		8/7/2015 3:00:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-007	SHS-9		8/7/2015 3:00:00 PM	8/8/2015 9:45:00 AM	Aqueous
1508343-008	Trip Blank			8/8/2015 9:45:00 AM	Trip Blank

Analytical Report

Lab Order 1508343

Date Reported: 8/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-21D

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 12:30:00 PM

Lab ID: 1508343-001

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	350	10		mg/L	10	8/11/2015 8:48:31 PM	20682
Surr: DNOP	0	72-136	S	%REC	10	8/11/2015 8:48:31 PM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	1.0	D	mg/L	20	8/12/2015 2:51:54 PM	R28140
Surr: BFB	89.0	57.8-137	D	%REC	20	8/12/2015 2:51:54 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical ReportLab Order **1508343**Date Reported: **8/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-22**Project:** GBR Shutdown Action Plan**Collection Date:** 8/7/2015 11:35:00 AM**Lab ID:** 1508343-002**Matrix:** AQUEOUS**Received Date:** 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	110	10		mg/L	10	8/12/2015 9:02:49 AM	20682
Surr: DNOP	0	72-136	S	%REC	10	8/12/2015 9:02:49 AM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.34	0.25	D	mg/L	5	8/12/2015 3:16:43 PM	R28140
Surr: BFB	96.9	57.8-137	D	%REC	5	8/12/2015 3:16:43 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508343

Date Reported: 8/15/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-25

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 12:23:00 PM

Lab ID: 1508343-003

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	92	1.0		mg/L	1	8/11/2015 10:14:44 PM	20682
Surr: DNOP	85.4	72-136		%REC	1	8/11/2015 10:14:44 PM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.98	0.25	P D	mg/L	5	8/12/2015 3:41:37 PM	R28140
Surr: BFB	155	57.8-137	SP D	%REC	5	8/12/2015 3:41:37 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical ReportLab Order **1508343**Date Reported: **8/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-26**Project:** GBR Shutdown Action Plan**Collection Date:** 8/7/2015 1:25:00 PM**Lab ID:** 1508343-004**Matrix:** AQUEOUS**Received Date:** 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	1.8	1.0		mg/L	1	8/11/2015 10:57:52 PM	20682
Surr: DNOP	89.4	72-136		%REC	1	8/11/2015 10:57:52 PM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.20	D	mg/L	4	8/12/2015 4:06:29 PM	R28140
Surr: BFB	98.6	57.8-137	D	%REC	4	8/12/2015 4:06:29 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1508343

Date Reported: 8/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-34

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 11:30:00 AM

Lab ID: 1508343-005

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	400	10		mg/L	10	8/12/2015 9:24:16 AM	20682
Surr: DNOP	0	72-136	S	%REC	10	8/12/2015 9:24:16 AM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	13	2.5	P	mg/L	50	8/11/2015 4:17:36 AM	R28068
Surr: BFB	125	57.8-137	P	%REC	50	8/11/2015 4:17:36 AM	R28068

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1508343

Date Reported: 8/15/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** SHS-8**Project:** GBR Shutdown Action Plan**Collection Date:** 8/7/2015 3:10:00 PM**Lab ID:** 1508343-006**Matrix:** AQUEOUS**Received Date:** 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	23	1.0		mg/L	1	8/12/2015 12:24:05 AM	20682
Surr: DNOP	98.4	72-136		%REC	1	8/12/2015 12:24:05 AM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	0.18	0.10	P	mg/L	2	8/11/2015 4:42:23 AM	R28068
Surr: BFB	126	57.8-137	P	%REC	2	8/11/2015 4:42:23 AM	R28068

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508343

Date Reported: 8/15/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-9

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 3:00:00 PM

Lab ID: 1508343-007

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	29	1.0		mg/L	1	8/12/2015 1:07:09 AM	20682
Surr: DNOP	91.7	72-136		%REC	1	8/12/2015 1:07:09 AM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.20	D	mg/L	4	8/12/2015 4:31:22 PM	R28140
Surr: BFB	108	57.8-137	D	%REC	4	8/12/2015 4:31:22 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical ReportLab Order **1508343**Date Reported: **8/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Trip Blank**Project:** GBR Shutdown Action Plan**Collection Date:****Lab ID:** 1508343-008**Matrix:** TRIP BLANK**Received Date:** 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/11/2015 5:31:52 AM	R28068
Surr: BFB	90.3	57.8-137		%REC	1	8/11/2015 5:31:52 AM	R28068

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508343

15-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID	MB-20682		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 20682		RunNo: 28064					
Prep Date:	8/10/2015		Analysis Date: 8/10/2015		SeqNo: 845825		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.98		1.000		98.1	72	136			

Sample ID	LCS-20682		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 20682		RunNo: 28064					
Prep Date:	8/10/2015		Analysis Date: 8/10/2015		SeqNo: 845826		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.4	1.0	5.000	0	127	60.1	156			
Surr: DNOP	0.55		0.5000		110	72	136			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508343

15-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID	5ML-RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R28068	RunNo:	28068					
Prep Date:		Analysis Date:	8/10/2015	SeqNo:	845770	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		91.4	57.8	137			

Sample ID	2.5UG LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R28068	RunNo:	28068					
Prep Date:		Analysis Date:	8/10/2015	SeqNo:	845771	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	20		20.00		97.7	57.8	137			

Sample ID	B30	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R28140	RunNo:	28140					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848357	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		92.1	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R28140	RunNo:	28140					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848358	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	87.1	80	120			
Surr: BFB	19		20.00		95.3	57.8	137			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
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 Southw**

Work Order Number: **1508343**

RcptNo: **1**

Received by/date:

Logged By: **Lindsay Mangin**

08/08/15
8/8/2015 9:45:00 AM

Completed By: **Lindsay Mangin**

8/8/2015 10:37:54 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Yes			

Chain-of-Custody Record

Client: Kelly Robinson, Western Refining

111 CR 4990

Mailing Address: Bloomfield, NM

Phone #: (970) 385-1096

email or Fax#: AAger@LTEnv.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

GBR Shutdown Action Plan

Project #:

WR1009

Project Manager:

Ashley Ager

Sampler: Alex Crooks / Michael Wickert

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6



**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.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
3-7-15	1230	GW	GBR-21D	Cool/HCl	1 / Amber	-001												
	1135		GBR-22	Cool/HCl		-002												
	1223		GBR-25	Cool ONLY		-003												
	1325		GBR-26	Cool ONLY		-004												
	1130		GBR-34	Cool ONLY		-005												
	1310		SHS-8	Cool/HCl		-006												
	1300		SHS-9	Cool/HCl	✓	-007												
✓	1405	✓	Trip Blank	1 NOA	HCl	-008												
			using 08/10/15															

Date: 3-7-15 Time: 1933 Relinquished by: [Signature]

Received by: [Signature] Date: 8/7/15 Time: 1553

Remarks: Copy DHeinemann@LTEnv.com

Date: 8/7/15 Time: 1807 Relinquished by: Christie Wheeler

Received by: [Signature] Date: 08/08/15 Time: 0945

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 24, 2015

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX (505) 632-3911

RE: GBR Shutdown Action Plan

OrderNo.: 1508346

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/8/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-21D

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 12:30:00 PM

Lab ID: 1508346-001

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	330	50	*	mg/L	100	8/11/2015 10:55:23 AM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	2.0	D	µg/L	2	8/14/2015 12:57:48 AM	R28180
Toluene	ND	2.0	D	µg/L	2	8/14/2015 12:57:48 AM	R28180
Ethylbenzene	ND	2.0	D	µg/L	2	8/14/2015 12:57:48 AM	R28180
Xylenes, Total	ND	3.0	D	µg/L	2	8/14/2015 12:57:48 AM	R28180
Surr: 1,2-Dichloroethane-d4	99.4	70-130	D	%REC	2	8/14/2015 12:57:48 AM	R28180
Surr: 4-Bromofluorobenzene	90.5	70-130	D	%REC	2	8/14/2015 12:57:48 AM	R28180
Surr: Dibromofluoromethane	104	70-130	D	%REC	2	8/14/2015 12:57:48 AM	R28180
Surr: Toluene-d8	97.6	70-130	D	%REC	2	8/14/2015 12:57:48 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-22

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 11:35:00 AM

Lab ID: 1508346-002

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	470	50	*	mg/L	100	8/21/2015 10:28:39 PM	R28406
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	1.7	1.0	D	µg/L	2	8/14/2015 1:25:14 AM	R28180
Toluene	ND	2.0	D	µg/L	2	8/14/2015 1:25:14 AM	R28180
Ethylbenzene	16	2.0	D	µg/L	2	8/14/2015 1:25:14 AM	R28180
Xylenes, Total	6.3	3.0	D	µg/L	2	8/14/2015 1:25:14 AM	R28180
Surr: 1,2-Dichloroethane-d4	98.1	70-130	D	%REC	2	8/14/2015 1:25:14 AM	R28180
Surr: 4-Bromofluorobenzene	95.7	70-130	D	%REC	2	8/14/2015 1:25:14 AM	R28180
Surr: Dibromofluoromethane	107	70-130	D	%REC	2	8/14/2015 1:25:14 AM	R28180
Surr: Toluene-d8	99.2	70-130	D	%REC	2	8/14/2015 1:25:14 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-25

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 12:25:00 PM

Lab ID: 1508346-003

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	520	50	*	mg/L	100	8/11/2015 11:45:01 AM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	5.0	DP	µg/L	5	8/14/2015 1:52:44 AM	R28180
Toluene	ND	5.0	DP	µg/L	5	8/14/2015 1:52:44 AM	R28180
Ethylbenzene	15	5.0	DP	µg/L	5	8/14/2015 1:52:44 AM	R28180
Xylenes, Total	ND	7.5	DP	µg/L	5	8/14/2015 1:52:44 AM	R28180
Surr: 1,2-Dichloroethane-d4	99.8	70-130	DP	%REC	5	8/14/2015 1:52:44 AM	R28180
Surr: 4-Bromofluorobenzene	93.9	70-130	DP	%REC	5	8/14/2015 1:52:44 AM	R28180
Surr: Dibromofluoromethane	104	70-130	DP	%REC	5	8/14/2015 1:52:44 AM	R28180
Surr: Toluene-d8	104	70-130	DP	%REC	5	8/14/2015 1:52:44 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-26

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 1:25:00 PM

Lab ID: 1508346-004

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	170	5.0		mg/L	10	8/11/2015 12:22:14 PM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	2.0	DP	µg/L	2	8/14/2015 2:20:16 AM	R28180
Toluene	ND	2.0	DP	µg/L	2	8/14/2015 2:20:16 AM	R28180
Ethylbenzene	ND	2.0	DP	µg/L	2	8/14/2015 2:20:16 AM	R28180
Xylenes, Total	ND	3.0	DP	µg/L	2	8/14/2015 2:20:16 AM	R28180
Surr: 1,2-Dichloroethane-d4	96.7	70-130	DP	%REC	2	8/14/2015 2:20:16 AM	R28180
Surr: 4-Bromofluorobenzene	99.4	70-130	DP	%REC	2	8/14/2015 2:20:16 AM	R28180
Surr: Dibromofluoromethane	108	70-130	DP	%REC	2	8/14/2015 2:20:16 AM	R28180
Surr: Toluene-d8	96.9	70-130	DP	%REC	2	8/14/2015 2:20:16 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-34

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 11:30:00 AM

Lab ID: 1508346-005

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	280	50	*	mg/L	100	8/11/2015 12:59:29 PM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	5.2	5.0	DP	µg/L	5	8/14/2015 2:47:49 AM	R28180
Toluene	ND	5.0	DP	µg/L	5	8/14/2015 2:47:49 AM	R28180
Ethylbenzene	51	5.0	DP	µg/L	5	8/14/2015 2:47:49 AM	R28180
Xylenes, Total	49	7.5	DP	µg/L	5	8/14/2015 2:47:49 AM	R28180
Surr: 1,2-Dichloroethane-d4	103	70-130	DP	%REC	5	8/14/2015 2:47:49 AM	R28180
Surr: 4-Bromofluorobenzene	51.0	70-130	SDP	%REC	5	8/14/2015 2:47:49 AM	R28180
Surr: Dibromofluoromethane	100	70-130	DP	%REC	5	8/14/2015 2:47:49 AM	R28180
Surr: Toluene-d8	98.0	70-130	DP	%REC	5	8/14/2015 2:47:49 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 3:10:00 PM

Lab ID: 1508346-006

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	120	5.0		mg/L	10	8/11/2015 1:11:53 PM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/14/2015 3:15:27 AM	R28180
Toluene	ND	1.0		µg/L	1	8/14/2015 3:15:27 AM	R28180
Ethylbenzene	14	1.0		µg/L	1	8/14/2015 3:15:27 AM	R28180
Xylenes, Total	ND	1.5		µg/L	1	8/14/2015 3:15:27 AM	R28180
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	8/14/2015 3:15:27 AM	R28180
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	1	8/14/2015 3:15:27 AM	R28180
Surr: Dibromofluoromethane	111	70-130		%REC	1	8/14/2015 3:15:27 AM	R28180
Surr: Toluene-d8	101	70-130		%REC	1	8/14/2015 3:15:27 AM	R28180

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-9

Project: GBR Shutdown Action Plan

Collection Date: 8/7/2015 3:00:00 PM

Lab ID: 1508346-007

Matrix: AQUEOUS

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	96	50		mg/L	100	8/11/2015 1:49:08 PM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	5.0	D	µg/L	5	8/14/2015 3:42:53 AM	R28180
Toluene	ND	5.0	D	µg/L	5	8/14/2015 3:42:53 AM	R28180
Ethylbenzene	21	5.0	D	µg/L	5	8/14/2015 3:42:53 AM	R28180
Xylenes, Total	ND	7.5	D	µg/L	5	8/14/2015 3:42:53 AM	R28180
Surr: 1,2-Dichloroethane-d4	101	70-130	D	%REC	5	8/14/2015 3:42:53 AM	R28180
Surr: 4-Bromofluorobenzene	94.4	70-130	D	%REC	5	8/14/2015 3:42:53 AM	R28180
Surr: Dibromofluoromethane	109	70-130	D	%REC	5	8/14/2015 3:42:53 AM	R28180
Surr: Toluene-d8	101	70-130	D	%REC	5	8/14/2015 3:42:53 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508346

Date Reported: 8/24/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Shutdown Action Plan

Collection Date:

Lab ID: 1508346-008

Matrix: TRIP BLANK

Received Date: 8/8/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/14/2015 4:37:39 AM	R28180
Toluene	ND	1.0		µg/L	1	8/14/2015 4:37:39 AM	R28180
Ethylbenzene	ND	1.0		µg/L	1	8/14/2015 4:37:39 AM	R28180
Xylenes, Total	ND	1.5		µg/L	1	8/14/2015 4:37:39 AM	R28180
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	8/14/2015 4:37:39 AM	R28180
Surr: 4-Bromofluorobenzene	110	70-130		%REC	1	8/14/2015 4:37:39 AM	R28180
Surr: Dibromofluoromethane	107	70-130		%REC	1	8/14/2015 4:37:39 AM	R28180
Surr: Toluene-d8	99.4	70-130		%REC	1	8/14/2015 4:37:39 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508346

24-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28135	RunNo:	28135					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847702	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28135	RunNo:	28135					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847703	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	99.2	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28135	RunNo:	28135					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847758	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28135	RunNo:	28135					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847759	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.3	0.50	5.000	0	106	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28406	RunNo:	28406					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	858181	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28406	RunNo:	28406					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	858182	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508346

24-Aug-15

Client: Western Refining Southwest, Inc.
Project: GBR Shutdown Action Plan

Sample ID rb1	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849535		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	9.8		10.00		97.7	70	130			

Sample ID 100ng lcs2	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849536		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |



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 Southw

Work Order Number: 1508346

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

08/08/15
8/8/2015 9:45:00 AM

Completed By: Lindsay Mangin

8/8/2015 10:59:38 AM

Reviewed By:

08/10/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☒ No VOA Vials ☐ *Sample -003A (6 vials) have bubble CS 08/10/15*
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels? Yes ☒ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
- (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐ Checked by:
- (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Yes			

Chain-of-Custody Record

Client: Kelly Robinson
Western Refining
Mailing Address: 111 CR 4990
Bloomfield, NM 87413
Phone #: 970-385-1096
email or Fax#: adger@henv.com
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush
Project Name:
GBK Annual Sampling
Project #:
WR1509
Project Manager:
Ashley Aguer
Sampler: Deyn Hennemann
On Ice: ☐ Yes ☒ No
Sample Temperature: 4.6



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	BTEX + MTBE	BTEX + MTBE	TPH 8015B	TPH (Method)	EDB (Method)	PAH's (8310)	RCRA 8 Metals	Anions (F, Cl)	8081 Pesticides	8260B (VOA)	8270 (Semi-VOA)	Chloride	Air Bubbles
7/2/15	1230	GW	GBR-21D	Various/5	Cool/HCl	1508346 -001													
	1135		GBR-22		Cool/HCl	-002													
	1225		GBR-25		Cool Only	-003													
	1325		GBR-26		Cool Only	-004													
	1130		GBR-34		Cool Only	-005													
	1610		SHS-8		Cool/HCl	-006													
	1500		SHS-9		Cool/HCl	-007													
			Trip Blank	1-VOA	HCl	-008													
															</				

Date: 7/7/15 Time: 1550 Relinquished by: Alex Corder
Date: 7/15 Time: 1807 Relinquished by: Christine Walters
Received by: Christine Walters Date: 8/7/15 Time: 1550 Remarks: CE
Received by: [Signature] Date: 08/08/15 Time: 0945 dhennemann@henv.com



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 20, 2015

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX (505) 632-3911

RE: GBR Shutdown Action Plan

OrderNo.: 1508344

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/7/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508344

Date Reported: 8/20/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-8

Project: GBR Shutdown Action Plan

Collection Date: 8/6/2015 2:00:00 PM

Lab ID: 1508344-001

Matrix: AQUEOUS

Received Date: 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	86	5.0		mg/L	10	8/14/2015 4:58:44 AM	R28196
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	5.0	D	µg/L	5	8/13/2015 7:56:21 PM	R28180
Toluene	ND	5.0	D	µg/L	5	8/13/2015 7:56:21 PM	R28180
Ethylbenzene	ND	5.0	D	µg/L	5	8/13/2015 7:56:21 PM	R28180
Xylenes, Total	ND	7.5	D	µg/L	5	8/13/2015 7:56:21 PM	R28180
Surr: 1,2-Dichloroethane-d4	101	70-130	D	%REC	5	8/13/2015 7:56:21 PM	R28180
Surr: 4-Bromofluorobenzene	101	70-130	D	%REC	5	8/13/2015 7:56:21 PM	R28180
Surr: Dibromofluoromethane	114	70-130	D	%REC	5	8/13/2015 7:56:21 PM	R28180
Surr: Toluene-d8	99.6	70-130	D	%REC	5	8/13/2015 7:56:21 PM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508344

Date Reported: 8/20/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-11

Project: GBR Shutdown Action Plan

Collection Date: 8/6/2015 1:20:00 PM

Lab ID: 1508344-002

Matrix: AQUEOUS

Received Date: 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	95	5.0		mg/L	10	8/14/2015 5:11:09 AM	R28196
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	1.7	1.0		µg/L	1	8/13/2015 9:18:39 PM	R28180
Toluene	ND	1.0		µg/L	1	8/13/2015 9:18:39 PM	R28180
Ethylbenzene	1.1	1.0		µg/L	1	8/13/2015 9:18:39 PM	R28180
Xylenes, Total	ND	1.5		µg/L	1	8/13/2015 9:18:39 PM	R28180
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	8/13/2015 9:18:39 PM	R28180
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/13/2015 9:18:39 PM	R28180
Surr: Dibromofluoromethane	112	70-130		%REC	1	8/13/2015 9:18:39 PM	R28180
Surr: Toluene-d8	97.4	70-130		%REC	1	8/13/2015 9:18:39 PM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1508344

Date Reported: 8/20/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-20

Project: GBR Shutdown Action Plan

Collection Date: 8/6/2015 3:20:00 PM

Lab ID: 1508344-003

Matrix: AQUEOUS

Received Date: 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	96	5.0		mg/L	10	8/14/2015 5:23:34 AM	R28196
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	2.0	D	µg/L	2	8/13/2015 9:46:04 PM	R28180
Toluene	ND	2.0	D	µg/L	2	8/13/2015 9:46:04 PM	R28180
Ethylbenzene	ND	2.0	D	µg/L	2	8/13/2015 9:46:04 PM	R28180
Xylenes, Total	ND	3.0	D	µg/L	2	8/13/2015 9:46:04 PM	R28180
Surr: 1,2-Dichloroethane-d4	100	70-130	D	%REC	2	8/13/2015 9:46:04 PM	R28180
Surr: 4-Bromofluorobenzene	95.2	70-130	D	%REC	2	8/13/2015 9:46:04 PM	R28180
Surr: Dibromofluoromethane	110	70-130	D	%REC	2	8/13/2015 9:46:04 PM	R28180
Surr: Toluene-d8	100	70-130	D	%REC	2	8/13/2015 9:46:04 PM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical ReportLab Order **1508344**Date Reported: **8/20/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Trip Blank**Project:** GBR Shutdown Action Plan**Collection Date:****Lab ID:** 1508344-004**Matrix:** AQUEOUS**Received Date:** 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/14/2015 12:30:27 AM	R28180
Toluene	ND	1.0		µg/L	1	8/14/2015 12:30:27 AM	R28180
Ethylbenzene	ND	1.0		µg/L	1	8/14/2015 12:30:27 AM	R28180
Xylenes, Total	ND	1.5		µg/L	1	8/14/2015 12:30:27 AM	R28180
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%REC	1	8/14/2015 12:30:27 AM	R28180
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	8/14/2015 12:30:27 AM	R28180
Surr: Dibromofluoromethane	108	70-130		%REC	1	8/14/2015 12:30:27 AM	R28180
Surr: Toluene-d8	104	70-130		%REC	1	8/14/2015 12:30:27 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508344

20-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28196	RunNo:	28196					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849656	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28196	RunNo:	28196					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849657	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.1	0.50	5.000	0	103	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28196	RunNo:	28196					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849716	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28196	RunNo:	28196					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849717	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.1	0.50	5.000	0	101	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508344

20-Aug-15

Client: Western Refining Southwest, Inc.
Project: GBR Shutdown Action Plan

Sample ID rb1	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849535		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	9.8		10.00		97.7	70	130			

Sample ID 100ng lcs2	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849536		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID 1508344-001a ms	SampType: MS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: GBR-8	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849538		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	100	5.0	100.0	0	103	70	130			D
Toluene	100	5.0	100.0	0	101	70	130			D
Surr: 1,2-Dichloroethane-d4	50		50.00		99.7	70	130			D
Surr: 4-Bromofluorobenzene	52		50.00		105	70	130			D
Surr: Dibromofluoromethane	55		50.00		110	70	130			D
Surr: Toluene-d8	48		50.00		96.1	70	130			D

Sample ID 1508344-001a msd	SampType: MSD		TestCode: EPA Method 8260B: VOLATILES							
Client ID: GBR-8	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849539		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	110	5.0	100.0	0	106	70	130	2.69	20	D
Toluene	110	5.0	100.0	0	106	70	130	4.64	20	D

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508344

20-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID 1508344-001a msd				SampType: MSD		TestCode: EPA Method 8260B: VOLATILES				
Client ID: GBR-8		Batch ID: R28180		RunNo: 28180						
Prep Date:		Analysis Date: 8/13/2015		SeqNo: 849539			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	51		50.00		103	70	130	0	0	D
Surr: 4-Bromofluorobenzene	50		50.00		101	70	130	0	0	D
Surr: Dibromofluoromethane	55		50.00		110	70	130	0	0	D
Surr: Toluene-d8	50		50.00		100	70	130	0	0	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
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 Southw**

Work Order Number: **1508344**

RcptNo: 1

Received by/date:

AB

08/10/15

Logged By: **Lindsay Mangin**

8/7/2015 8:00:00 AM

Lindsay Mangin

Completed By: **Lindsay Mangin**

8/8/2015 10:51:57 AM

Lindsay Mangin

Reviewed By:

JA

08/10/15

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☐

No ☐

Not Present ☒

Yes ☒

No ☐

Not Present ☐

Courier

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?
10. VOA vials have zero headspace?
11. Were any sample containers received broken?
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody?
14. Is it clear what analyses were requested?
15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒

No ☐

NA ☐

Yes ☒

No ☐

NA ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☐

No ☒

NA ☐

Yes ☒

No ☐

No VOA Vials ☐

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Yes ☒

No ☐

Adjusted?

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☒

No ☐

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.7	Good	Yes			

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 15, 2015

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX (505) 632-3911

RE: GBR Shutdown Action Plan

OrderNo.: 1508345

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/7/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Workorder Sample Summary

WO#: 1508345

15-Aug-15

CLIENT: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1508345-001	GBR-8		8/6/2015 2:00:00 PM	8/7/2015 8:00:00 AM	Aqueous
1508345-001	GBR-8		8/6/2015 2:00:00 PM	8/7/2015 8:00:00 AM	Aqueous
1508345-002	GBR-11		8/6/2015 1:20:00 PM	8/7/2015 8:00:00 AM	Aqueous
1508345-002	GBR-11		8/6/2015 1:20:00 PM	8/7/2015 8:00:00 AM	Aqueous
1508345-003	GBR-20		8/6/2015 3:20:00 PM	8/7/2015 8:00:00 AM	Aqueous
1508345-003	GBR-20		8/6/2015 3:20:00 PM	8/7/2015 8:00:00 AM	Aqueous
1508345-004	Trip Blank			8/7/2015 8:00:00 AM	Trip Blank

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508345

Date Reported: 8/15/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-8

Project: GBR Shutdown Action Plan

Collection Date: 8/6/2015 2:00:00 PM

Lab ID: 1508345-001

Matrix: AQUEOUS

Received Date: 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	16	1.0		mg/L	1	8/10/2015 8:57:22 PM	20682
Surr: DNOP	106	72-136		%REC	1	8/10/2015 8:57:22 PM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.20	D	mg/L	4	8/12/2015 4:56:12 PM	R28140
Surr: BFB	101	57.8-137	D	%REC	4	8/12/2015 4:56:12 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-11

Project: GBR Shutdown Action Plan

Collection Date: 8/6/2015 1:20:00 PM

Lab ID: 1508345-002

Matrix: AQUEOUS

Received Date: 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	1.9	1.0		mg/L	1	8/10/2015 9:24:42 PM	20682
Surr: DNOP	100	72-136		%REC	1	8/10/2015 9:24:42 PM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.20	D	mg/L	4	8/12/2015 5:21:00 PM	R28140
Surr: BFB	104	57.8-137	D	%REC	4	8/12/2015 5:21:00 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical ReportLab Order **1508345**Date Reported: **8/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-20**Project:** GBR Shutdown Action Plan**Collection Date:** 8/6/2015 3:20:00 PM**Lab ID:** 1508345-003**Matrix:** AQUEOUS**Received Date:** 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	56	1.0		mg/L	1	8/10/2015 9:51:57 PM	20682
Surr: DNOP	115	72-136		%REC	1	8/10/2015 9:51:57 PM	20682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.39	0.25	D	mg/L	5	8/12/2015 5:45:49 PM	R28140
Surr: BFB	118	57.8-137	D	%REC	5	8/12/2015 5:45:49 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical ReportLab Order **1508345**Date Reported: **8/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Trip Blank**Project:** GBR Shutdown Action Plan**Collection Date:****Lab ID:** 1508345-004**Matrix:** TRIP BLANK**Received Date:** 8/7/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2015 6:10:37 PM	R28140
Surr: BFB	93.2	57.8-137		%REC	1	8/12/2015 6:10:37 PM	R28140

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508345

15-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID	MB-20682	SampType	MBLK	TestCode	EPA Method 8015M/D: Diesel Range					
Client ID	PBW	Batch ID	20682	RunNo	28064					
Prep Date	8/10/2015	Analysis Date	8/10/2015	SeqNo	845825	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.98		1.000		98.1	72	136			

Sample ID	LCS-20682	SampType	LCS	TestCode	EPA Method 8015M/D: Diesel Range					
Client ID	LCSW	Batch ID	20682	RunNo	28064					
Prep Date	8/10/2015	Analysis Date	8/10/2015	SeqNo	845826	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.4	1.0	5.000	0	127	60.1	156			
Surr: DNOP	0.55		0.5000		110	72	136			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508345

15-Aug-15

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown Action Plan

Sample ID B30	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R28140		RunNo: 28140							
Prep Date:	Analysis Date: 8/12/2015		SeqNo: 848357		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		92.1	57.8	137			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R28140		RunNo: 28140							
Prep Date:	Analysis Date: 8/12/2015		SeqNo: 848358		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	87.1	80	120			
Surr: BFB	19		20.00		95.3	57.8	137			

Sample ID 1508345-003AMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: GBR-20	Batch ID: R28140		RunNo: 28140							
Prep Date:	Analysis Date: 8/12/2015		SeqNo: 848370		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.9	0.25	2.500	0.3900	99.4	51	131			
Surr: BFB	120		100.0		119	57.8	137			

Sample ID 1508345-003AMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: GBR-20	Batch ID: R28140		RunNo: 28140							
Prep Date:	Analysis Date: 8/12/2015		SeqNo: 848371		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.5	0.25	2.500	0.3900	84.3	51	131	14.0	20	
Surr: BFB	110		100.0		107	57.8	137	0	0	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |



Hall Environmental Analysis Laboratory
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 Southw

Work Order Number: 1508345

RcptNo: 1

Received by/date:

AG

08/07/15

Logged By: Lindsay Mangin

8/7/2015 8:00:00 AM

Lindsay Mangin

Completed By: Lindsay Mangin

8/8/2015 10:55:44 AM

Lindsay Mangin

Reviewed By:

JA

08/10/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.7	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: Kelly Robinson		<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush
Western Refining		Project Name:	
Mailing Address: 111 CR 4990		GBR Shutdown Action Plan	
Bloomfield, NM		Project #:	
Phone #: (970) 385-1096		WR1009	
email or Fax#: AAgier@LTEnv.com		Project Manager:	
QA/QC Package:		Ashley Agier	
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)	Sampler: Devin Hennemann/Michael Wicker	
Accreditation		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> NELAP	<input type="checkbox"/> Other	Sample Temperature: 27	
<input type="checkbox"/> EDD (Type)			

☒ **Standard** ☐ **Rush**

GBR Shutdown Action Plan

WR1009

Ashley Ager

Sampler: Devin Henemann / Michael Winkler

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.7

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
6-15	1640	<i>[Signature]</i>	<i>[Signature]</i>	6/15/11	1640

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/6/15	2:10	Christie Walker	Am Gallen	08/07/15	0800

Black	White	Black
White	Black	White
Black	White	Black

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Remarks:	Please copy DHencmann@LTENV.com
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Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 12, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 403-6023

FAX (505) 632-3911

RE: GBR Shutdown

OrderNo.: 1508411

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/11/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508411

Date Reported: 2/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-2

Project: GBR Shutdown

Collection Date: 8/10/2015 11:50:00 AM

Lab ID: 1508411-001

Matrix: AQUEOUS

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	19	1.0		mg/L	1	8/13/2015 6:28:44 PM	20760
Surr: DNOP	125	72-136		%Rec	1	8/13/2015 6:28:44 PM	20760
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	1.0	P D	mg/L	20	8/19/2015 11:50:32 AM	A28329
Surr: BFB	87.3	57.8-137	P D	%Rec	20	8/19/2015 11:50:32 AM	A28329

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508411

12-Feb-16

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	MB-20760		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					✔	
Client ID:	PBW		Batch ID: 20760		RunNo: 28159						
Prep Date:	8/13/2015		Analysis Date: 8/13/2015		SeqNo: 849273			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	1.0									✔
Surr: DNOP	1.2		1.000		121	72	136				✔

Sample ID	LCS-20760		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 20760		RunNo: 28159					
Prep Date:	8/13/2015		Analysis Date: 8/13/2015		SeqNo: 849274		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	111	60.1	156			
Surr: DNOP	0.59		0.5000		119	72	136			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508411

12-Feb-16

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A28329	RunNo:	28329					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855363	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	16		20.00		80.9	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A28329	RunNo:	28329					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855364	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.0	80	120			
Surr: BFB	17		20.00		85.3	57.8	137			

Sample ID	1508411-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SHS-2	Batch ID:	A28329	RunNo:	28329					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855369	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	9.5	1.0	10.00	0.2840	92.6	70	130			
Surr: BFB	360		400.0		89.2	57.8	137			

Sample ID	1508411-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SHS-2	Batch ID:	A28329	RunNo:	28329					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855370	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	9.2	1.0	10.00	0.2840	89.3	70	130	3.54	20	
Surr: BFB	370		400.0		92.0	57.8	137	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.halleenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1508411

RcptNo: 1

Received by/date:

Ag

08/11/15

Logged By: Ashley Gallegos

8/11/2015 7:40:00 AM

Ag

Completed By: Ashley Gallegos

8/11/2015 9:46:50 AM

Ag

Reviewed By:

CS

08/11/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted? _____

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: Kelly Robinson		<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush
Western Refining		Project Name: Shutdown	
Mailing Address: 111 CR 4770		60K Annual Sampling per Alex.	
Bloomfield NM, 87413		Project #:	WR1009
Phone #: 970-385-7096			08/20
email or Fax#: dhencmann@tenv.com		Project Manager:	Devin Hencmann
QA/QC Package:		Sampler:	
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)	On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Accreditation		Sample Temperature:	10
<input type="checkbox"/> NELAP	<input type="checkbox"/> Other		
<input type="checkbox"/> EDD (Type)			

Black	White	Black
White	Black	White
Black	White	Black

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/10/15	1517	Celestina	Christen Waite	8/10/15	1517
Date:	Time:	Relinquished by:	Received by:	Date	Time
8/10/15	2030	Christen Waite	Angela	08/11/15	0740

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.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 15, 2015

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 403-6023

FAX

RE: GBR Annual

OrderNo.: 1508412

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/11/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Workorder Sample Summary

WO#: 1508412

15-Aug-15

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1508412-001	SHS-2		8/10/2015 11:50:00 AM	8/11/2015 7:40:00 AM	Aqueous
1508412-001	SHS-2		8/10/2015 11:50:00 AM	8/11/2015 7:40:00 AM	Aqueous

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508412

Date Reported: 8/15/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-2

Project: GBR Annual

Collection Date: 8/10/2015 11:50:00 AM

Lab ID: 1508412-001

Matrix: AQUEOUS

Received Date: 8/11/2015 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	280	50	*	mg/L	100	8/11/2015 7:11:47 PM	R28135
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	5.0	D	µg/L	5	8/14/2015 5:05:18 AM	R28180
Toluene	ND	5.0	D	µg/L	5	8/14/2015 5:05:18 AM	R28180
Ethylbenzene	ND	5.0	D	µg/L	5	8/14/2015 5:05:18 AM	R28180
Xylenes, Total	ND	7.5	D	µg/L	5	8/14/2015 5:05:18 AM	R28180
Surr: 1,2-Dichloroethane-d4	98.2	70-130	D	%REC	5	8/14/2015 5:05:18 AM	R28180
Surr: 4-Bromofluorobenzene	110	70-130	D	%REC	5	8/14/2015 5:05:18 AM	R28180
Surr: Dibromofluoromethane	105	70-130	D	%REC	5	8/14/2015 5:05:18 AM	R28180
Surr: Toluene-d8	101	70-130	D	%REC	5	8/14/2015 5:05:18 AM	R28180

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508412

15-Aug-15

Client: Western Refining Southwest, Inc.
Project: GBR Annual

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28135		RunNo: 28135							
Prep Date:	Analysis Date: 8/11/2015		SeqNo: 847702		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28135		RunNo: 28135							
Prep Date:	Analysis Date: 8/11/2015		SeqNo: 847703		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	99.2	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28135		RunNo: 28135							
Prep Date:	Analysis Date: 8/11/2015		SeqNo: 847758		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28135		RunNo: 28135							
Prep Date:	Analysis Date: 8/11/2015		SeqNo: 847759		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.3	0.50	5.000	0	106	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508412

15-Aug-15

Client: Western Refining Southwest, Inc.
Project: GBR Annual

Sample ID rb1	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849535		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	9.8		10.00		97.7	70	130			

Sample ID 100ng lcs2	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R28180		RunNo: 28180							
Prep Date:	Analysis Date: 8/13/2015		SeqNo: 849536		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1508412

RcptNo: 1

Received by/date:

AG

08/11/15

Logged By: Ashley Gallegos

8/11/2015 7:40:00 AM

AG

Completed By: Ashley Gallegos

8/11/2015 9:50:03 AM

AG

Reviewed By:

CS

08/11/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Client: Kelly Robinson
Western Refining
Mailing Address: 111 CR 4990
Bloomfield, NM, 87413
Phone #: 770-385-1096
email or Fax#: chencwanna@westernrefining.com
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type)

☒ **Standard** ☐ **Rush**

GBR Annual

Project #: WP 1509

Devin Henschmann

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

[illegible]

Analysis Request					
BTEX + MTBE + TMB's (8021)					
BTEX + MTBE + TPH (Gas only)					
TPH 8015B (GRO / DRO / MRO)					
TPH (Method 418.1)					
EDB (Method 504.1)					
PAH's (8310 or 8270 SIMS)					
RCRA 8 Metals					
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)					
8081 Pesticides / 8082 PCB's					
8260B (VOA)					
8270 (Semi-VOA)					
X Chloride + BTEX					
Air Bubbles (Y or N)					

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/10/15	1517	Alex Crakes	Christine Walters	8/10/15	1517
Date:	Time:	Relinquished by:	Received by:	Date	Time
8/10/15	2030	Christine Walters	Mr. Gallager	08/11/15	0740

Remarks:



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 01, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Shutdown

OrderNo.: 1603E56

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 7 sample(s) on 3/31/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 05, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** SHS-8**Project:** GBR Shutdown**Collection Date:** 3/30/2016 10:55:00 AM**Lab ID:** 1603E56-001**Matrix:** AQUEOUS**Received Date:** 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	6.0	1.0		mg/L	1	4/1/2016 4:54:30 PM
Surr: DNOP	102	70-141		%Rec	1	4/1/2016 4:54:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.060	0.050		mg/L	1	4/1/2016 2:59:35 PM
Surr: BFB	111	49.5-130		%Rec	1	4/1/2016 2:59:35 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	Page 1 of 9
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-9

Project: GBR Shutdown

Collection Date: 3/30/2016 11:30:00 AM

Lab ID: 1603E56-002

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	32	1.0		mg/L	1	4/1/2016 5:16:08 PM
Surr: DNOP	121	70-141		%Rec	1	4/1/2016 5:16:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.20	0.050		mg/L	1	4/1/2016 4:13:08 PM
Surr: BFB	144	49.5-130	S	%Rec	1	4/1/2016 4:13:08 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** SHS-2**Project:** GBR Shutdown**Collection Date:** 3/30/2016 12:10:00 PM**Lab ID:** 1603E56-003**Matrix:** AQUEOUS**Received Date:** 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	18	1.0		mg/L	1	4/1/2016 5:37:58 PM
Surr: DNOP	100	70-141		%Rec	1	4/1/2016 5:37:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	4/1/2016 4:37:40 PM
Surr: BFB	84.5	49.5-130	D	%Rec	5	4/1/2016 4:37:40 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-26

Project: GBR Shutdown

Collection Date: 3/30/2016 12:55:00 PM

Lab ID: 1603E56-004

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	13	1.0		mg/L	1	4/1/2016 5:59:32 PM
Surr: DNOP	112	70-141		%Rec	1	4/1/2016 5:59:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.053	0.050		mg/L	1	4/1/2016 5:02:09 PM
Surr: BFB	90.2	49.5-130		%Rec	1	4/1/2016 5:02:09 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-21D

Project: GBR Shutdown

Collection Date: 3/30/2016 1:25:00 PM

Lab ID: 1603E56-005

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	22	1.0		mg/L	1	4/1/2016 6:21:12 PM
Surr: DNOP	104	70-141		%Rec	1	4/1/2016 6:21:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.059	0.050		mg/L	1	4/1/2016 5:26:39 PM
Surr: BFB	104	49.5-130		%Rec	1	4/1/2016 5:26:39 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-25

Project: GBR Shutdown

Collection Date: 3/30/2016 2:25:00 PM

Lab ID: 1603E56-006

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	250	10		mg/L	10	4/4/2016 8:18:13 AM
Surr: DNOP	0	70-141	S	%Rec	10	4/4/2016 8:18:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.60	0.25	D	mg/L	5	4/1/2016 5:51:10 PM
Surr: BFB	104	49.5-130	D	%Rec	5	4/1/2016 5:51:10 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1603E56

Date Reported: 3/1/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-22

Project: GBR Shutdown

Collection Date: 3/30/2016 3:00:00 PM

Lab ID: 1603E56-007

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	140	10		mg/L	10	4/4/2016 8:39:40 AM
Surr: DNOP	0	70-141	S	%Rec	10	4/4/2016 8:39:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.32	0.25	D	mg/L	5	4/1/2016 11:58:21 PM
Surr: BFB	91.3	49.5-130	D	%Rec	5	4/1/2016 11:58:21 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603E56

01-Mar-17

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	LCS-24574		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24574		RunNo: 33232					
Prep Date:	4/1/2016		Analysis Date: 4/1/2016		SeqNo: 1020954		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.8	71.3	139			
Surr: DNOP	0.51		0.5000		101	70	141			

Sample ID	MB-24574		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 24574		RunNo: 33232					
Prep Date:	4/1/2016		Analysis Date: 4/1/2016		SeqNo: 1020955		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	1.1		1.000		108	70	141			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603E56

01-Mar-17

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	1603E56-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SHS-8	Batch ID:	R33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021755	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0.06000	95.7	70	130			
Surr: BFB	36		20.00		182	49.5	130			S

Sample ID	1603E56-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SHS-8	Batch ID:	R33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021756	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0.06000	95.0	70	130	0.671	20	
Surr: BFB	36		20.00		182	49.5	130	0	0	S

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021770	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.3	80	120			
Surr: BFB	19		20.00		95.7	49.5	130			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021771	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.1	49.5	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
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 Southw

Work Order Number: 1603E56

RcptNo: 1

Received by/date:

[Signature] 03/31/16

Logged By: Lindsay Mangin

3/31/2016 7:30:00 AM

[Signature]

Completed By: Lindsay Mangin

3/31/2016 11:39:19 AM

[Signature]

Reviewed By:

[Signature] 04/01/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 12, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Shutdown

OrderNo.: 1603E57

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 7 sample(s) on 3/31/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E57

Date Reported: 4/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Shutdown

Collection Date: 3/30/2016 10:55:00 AM

Lab ID: 1603E57-001

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	97	10		mg/L	20	4/1/2016 9:27:57 PM	R33267
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/1/2016 9:20:41 AM	A33266
Toluene	ND	1.0		µg/L	1	4/1/2016 9:20:41 AM	A33266
Ethylbenzene	14	1.0		µg/L	1	4/1/2016 9:20:41 AM	A33266
Xylenes, Total	ND	2.0		µg/L	1	4/1/2016 9:20:41 AM	A33266
Surr: 4-Bromofluorobenzene	148	87.9-146	S	%Rec	1	4/1/2016 9:20:41 AM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-9

Project: GBR Shutdown

Collection Date: 3/30/2016 11:30:00 AM

Lab ID: 1603E57-002

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	92	10		mg/L	20	4/1/2016 10:17:37 PM	R33267
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/1/2016 9:45:11 AM	A33266
Toluene	ND	1.0		µg/L	1	4/1/2016 9:45:11 AM	A33266
Ethylbenzene	24	1.0		µg/L	1	4/1/2016 9:45:11 AM	A33266
Xylenes, Total	ND	2.0		µg/L	1	4/1/2016 9:45:11 AM	A33266
Surr: 4-Bromofluorobenzene	130	87.9-146		%Rec	1	4/1/2016 9:45:11 AM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1603E57

Date Reported: 4/12/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-2

Project: GBR Shutdown

Collection Date: 3/30/2016 12:10:00 PM

Lab ID: 1603E57-003

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	270	10	*	mg/L	20	4/1/2016 10:42:26 PM	R33267
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	4/1/2016 10:08:50 AM	A33266
Toluene	ND	5.0	D	µg/L	5	4/1/2016 10:08:50 AM	A33266
Ethylbenzene	ND	5.0	D	µg/L	5	4/1/2016 10:08:50 AM	A33266
Xylenes, Total	ND	10	D	µg/L	5	4/1/2016 10:08:50 AM	A33266
Surr: 4-Bromofluorobenzene	104	87.9-146	D	%Rec	5	4/1/2016 10:08:50 AM	A33266

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1603E57

Date Reported: 4/12/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-26

Project: GBR Shutdown

Collection Date: 3/30/2016 12:55:00 PM

Lab ID: 1603E57-004

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	140	10		mg/L	20	4/2/2016 1:11:23 AM	A33267
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/1/2016 10:32:38 AM	A33266
Toluene	ND	1.0		µg/L	1	4/1/2016 10:32:38 AM	A33266
Ethylbenzene	ND	1.0		µg/L	1	4/1/2016 10:32:38 AM	A33266
Xylenes, Total	ND	2.0		µg/L	1	4/1/2016 10:32:38 AM	A33266
Surr: 4-Bromofluorobenzene	108	87.9-146		%Rec	1	4/1/2016 10:32:38 AM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E57

Date Reported: 4/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-21D

Project: GBR Shutdown

Collection Date: 3/30/2016 1:25:00 PM

Lab ID: 1603E57-005

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	380	10	*	mg/L	20	4/1/2016 11:56:54 PM	A33267
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	4/1/2016 10:56:23 AM	A33266
Toluene	ND	1.0		µg/L	1	4/1/2016 10:56:23 AM	A33266
Ethylbenzene	ND	1.0		µg/L	1	4/1/2016 10:56:23 AM	A33266
Xylenes, Total	ND	2.0		µg/L	1	4/1/2016 10:56:23 AM	A33266
Surr: 4-Bromofluorobenzene	117	87.9-146		%Rec	1	4/1/2016 10:56:23 AM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E57

Date Reported: 4/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-25

Project: GBR Shutdown

Collection Date: 3/30/2016 2:25:00 PM

Lab ID: 1603E57-006

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	640	25	*	mg/L	50	4/5/2016 9:23:58 PM	R33339
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	4/1/2016 11:20:09 AM	A33266
Toluene	ND	5.0	D	µg/L	5	4/1/2016 11:20:09 AM	A33266
Ethylbenzene	16	5.0	D	µg/L	5	4/1/2016 11:20:09 AM	A33266
Xylenes, Total	ND	10	D	µg/L	5	4/1/2016 11:20:09 AM	A33266
Surr: 4-Bromofluorobenzene	117	87.9-146	D	%Rec	5	4/1/2016 11:20:09 AM	A33266

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603E57

Date Reported: 4/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-22

Project: GBR Shutdown

Collection Date: 3/30/2016 3:00:00 PM

Lab ID: 1603E57-007

Matrix: AQUEOUS

Received Date: 3/31/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	420	25	*	mg/L	50	4/5/2016 9:36:22 PM	R33339
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	4/1/2016 12:07:32 PM	A33266
Toluene	ND	5.0	D	µg/L	5	4/1/2016 12:07:32 PM	A33266
Ethylbenzene	23	5.0	D	µg/L	5	4/1/2016 12:07:32 PM	A33266
Xylenes, Total	ND	10	D	µg/L	5	4/1/2016 12:07:32 PM	A33266
Surr: 4-Bromofluorobenzene	111	87.9-146	D	%Rec	5	4/1/2016 12:07:32 PM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603E57

12-Apr-16

Client: Western Refining Southwest, Inc.
Project: GBR Shutdown

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R33267		RunNo: 33267							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021774		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R33267		RunNo: 33267							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021775		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.9	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A33267		RunNo: 33267							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021849		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A33267		RunNo: 33267							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021851		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.3	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R33339		RunNo: 33339							
Prep Date:	Analysis Date: 4/5/2016		SeqNo: 1024512		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R33339		RunNo: 33339							
Prep Date:	Analysis Date: 4/5/2016		SeqNo: 1024513		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603E57

12-Apr-16

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	100NG BTEX LCS		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSW		Batch ID:	A33266		RunNo:	33266			
Prep Date:			Analysis Date:	4/1/2016		SeqNo:	1021805		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.2	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Xylenes, Total	62	2.0	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		115	87.9	146			

Sample ID	1603E57-001AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SHS-8		Batch ID:	A33266		RunNo:	33266			
Prep Date:			Analysis Date:	4/1/2016		SeqNo:	1021833		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0.4440	99.0	78	119			
Toluene	21	1.0	20.00	0	106	80	120			
Ethylbenzene	34	1.0	20.00	13.77	98.8	80	120			
Xylenes, Total	63	2.0	60.00	0.9480	104	75.3	120			
Surr: 4-Bromofluorobenzene	31		20.00		156	87.9	146			S

Sample ID	1603E57-001AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SHS-8		Batch ID:	A33266		RunNo:	33266			
Prep Date:			Analysis Date:	4/1/2016		SeqNo:	1021836		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0.4440	95.7	78	119	3.37	20	
Toluene	20	1.0	20.00	0	102	80	120	3.51	20	
Ethylbenzene	32	1.0	20.00	13.77	91.9	80	120	4.18	20	
Xylenes, Total	60	2.0	60.00	0.9480	98.3	75.3	120	5.58	20	
Surr: 4-Bromofluorobenzene	30		20.00		148	87.9	146	0	0	S

Sample ID	5ML RB		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBW		Batch ID:	A33266		RunNo:	33266			
Prep Date:			Analysis Date:	4/1/2016		SeqNo:	1021856		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		103	87.9	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1603E57

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

3/31/2016 7:30:00 AM

Completed By: Lindsay Mangin

3/31/2016 11:44:52 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			

Chain-of-Custody Record

ent: Kelly Robinson
 Western Refining
 Billing Address: 111CR 4990
 Bloomfield 1 NM
 Phone #: 970-385-1096
 Email or Fax#: chennemann@Henv.com
 VQC Package:
☒ Standard ☐ Level 4 (Full Validation)
 Accreditation
 NELAP ☐ Other _____
 EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

GBR Shutdown

Project #:

WR1009

Project Manager:

A Deun chennemann

Sampler:

Alex Crooks

On Ice:

☒ Yes ☐ No

Sample Temperature:

2.2



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE	BTEX + MTBE	TPH 8015B	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310)	RCRA 8 Metals	Anions (F, Cl)	8081 Pesticides	8260B (VOA)	8270 (Semi-VOA)	BTEX (8021)	Chloride	Air Bubbles
3/30	1055	GW	SHS-8	Various/4	HCL/NA	1603E57-001													XX	
	1130		SHS-9			-002														
	1210		SHS-2			-003														
	1255		GBR-26			-004														
	1325		GBR-21D			-005														
	1425		GBR-25			-006														
✓	1500	✓	GBR-22	✓	✓	-007														
																		</		

Relinquished by: Alex Crooks
 Received by: Chris Walt
 Date: 3/30/16 Time: 1545
 Relinquished by: Chris Walt
 Received by: [Signature]
 Date: 03/31/16 Time: 0730

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.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 06, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Shutdown

OrderNo.: 1604002

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/1/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-8

Project: GBR Shutdown

Collection Date: 3/31/2016 9:45:00 AM

Lab ID: 1604002-001

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	85	10		mg/L	20	4/1/2016 9:13:40 PM	R33247
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	4/1/2016 11:09:22 PM	A33266
Toluene	ND	5.0	D	µg/L	5	4/1/2016 11:09:22 PM	A33266
Ethylbenzene	ND	5.0	D	µg/L	5	4/1/2016 11:09:22 PM	A33266
Xylenes, Total	ND	10	D	µg/L	5	4/1/2016 11:09:22 PM	A33266
Surr: 4-Bromofluorobenzene	101	87.9-146	D	%Rec	5	4/1/2016 11:09:22 PM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604002

Date Reported: 4/6/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-20

Project: GBR Shutdown

Collection Date: 3/31/2016 10:00:00 AM

Lab ID: 1604002-002

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	82	10		mg/L	20	4/1/2016 9:38:30 PM	R33247
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	4/1/2016 11:33:50 PM	A33266
Toluene	ND	5.0	D	µg/L	5	4/1/2016 11:33:50 PM	A33266
Ethylbenzene	17	5.0	D	µg/L	5	4/1/2016 11:33:50 PM	A33266
Xylenes, Total	ND	10	D	µg/L	5	4/1/2016 11:33:50 PM	A33266
Surr: 4-Bromofluorobenzene	109	87.9-146	D	%Rec	5	4/1/2016 11:33:50 PM	A33266

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-11

Project: GBR Shutdown

Collection Date: 3/31/2016 10:30:00 AM

Lab ID: 1604002-003

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	97	2.5		mg/L	5	4/1/2016 9:50:54 PM	R33247
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	4/1/2016 11:39:40 AM	A33241
Toluene	ND	5.0	D	µg/L	5	4/1/2016 11:39:40 AM	A33241
Ethylbenzene	ND	5.0	D	µg/L	5	4/1/2016 11:39:40 AM	A33241
Xylenes, Total	ND	10	D	µg/L	5	4/1/2016 11:39:40 AM	A33241
Surr: 4-Bromofluorobenzene	101	87.9-146	D	%Rec	5	4/1/2016 11:39:40 AM	A33241

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604002

Date Reported: 4/6/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-34

Project: GBR Shutdown

Collection Date: 3/31/2016 11:15:00 AM

Lab ID: 1604002-004

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	220	10		mg/L	20	4/1/2016 10:28:07 PM	R33247
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	4/1/2016 12:50:16 PM	A33241
Toluene	ND	5.0	D	µg/L	5	4/1/2016 12:50:16 PM	A33241
Ethylbenzene	130	5.0	D	µg/L	5	4/1/2016 12:50:16 PM	A33241
Xylenes, Total	48	10	D	µg/L	5	4/1/2016 12:50:16 PM	A33241
Surr: 4-Bromofluorobenzene	116	87.9-146	D	%Rec	5	4/1/2016 12:50:16 PM	A33241

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604002

06-Apr-16

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R33247			RunNo: 33247						
Prep Date:		Analysis Date: 4/1/2016			SeqNo: 1021626		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R33247			RunNo: 33247						
Prep Date:		Analysis Date: 4/1/2016			SeqNo: 1021627		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.7	0.50	5.000	0	93.4	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604002

06-Apr-16

Client: Western Refining Southwest, Inc.
Project: GBR Shutdown

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBW	Batch ID: A33241		RunNo: 33241							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021183		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.0	87.9	146			

Sample ID 100NG BTEX LCS	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSW	Batch ID: A33241		RunNo: 33241							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021184		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.1	80	120			
Toluene	18	1.0	20.00	0	89.7	80	120			
Ethylbenzene	17	1.0	20.00	0	87.1	80	120			
Xylenes, Total	52	2.0	60.00	0	86.0	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		104	87.9	146			

Sample ID 1604002-003AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: GBR-11	Batch ID: A33241		RunNo: 33241							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021187		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	97	5.0	100.0	2.435	94.9	78	119			
Toluene	91	5.0	100.0	2.006	89.1	80	120			
Ethylbenzene	90	5.0	100.0	2.692	87.8	80	120			
Xylenes, Total	270	10	300.0	5.427	86.9	75.3	120			
Surr: 4-Bromofluorobenzene	110		100.0		109	87.9	146			

Sample ID 1604002-003AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: GBR-11	Batch ID: A33241		RunNo: 33241							
Prep Date:	Analysis Date: 4/1/2016		SeqNo: 1021188		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	96	5.0	100.0	2.435	93.3	78	119	1.61	20	
Toluene	90	5.0	100.0	2.006	87.7	80	120	1.54	20	
Ethylbenzene	89	5.0	100.0	2.692	86.4	80	120	1.53	20	
Xylenes, Total	260	10	300.0	5.427	85.0	75.3	120	2.23	20	
Surr: 4-Bromofluorobenzene	110		100.0		108	87.9	146	0	0	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604002

06-Apr-16

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	A33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021805	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.2	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Xylenes, Total	62	2.0	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		115	87.9	146			

Sample ID	5ML RB	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles						
Client ID:	PBW	Batch ID: A33266		RunNo: 33266						
Prep Date:		Analysis Date: 4/1/2016		SeqNo: 1021856		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		103	87.9	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1604002

RcptNo: 1

Received by/date:

Logged By: Joe Archuleta

4/1/2016 7:50:00 AM

Completed By: Joe Archuleta

4/1/2016 8:18:41 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

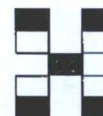
Project #:

Project Manager:

Sampler:

On Ice:

Sample Temperature:



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Client: Kelly Robinson
Western Refining
 Mailing Address: 111 CR 4990
Blomfield, NM
 Phone #: 970-385-1096
 Email or Fax#: dhencmann@lenv.com
 A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
 Accreditation
☒ NELAP ☐ Other _____
 EDD (Type) _____

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTE	BTEX + MTE	TPH 8015B	TPH (Method	EDB (Method	PAH's (8310	RCRA 8 Met	Anions (F, Cl	8081 Pesticide	8260B (VOA	8270 (Semi-V	BTEX (phloride	Air Bubbles (
3/31	945	GW	GBR-8	Vials/4	HCl + Na	1004002 -001												X	X	
	1000		GBR-20			-002														
	1030		GBR-11			-003														
	1115		GBR-34			-004														

Relinquished by: Alex Groves Received by: Christa Walt Date: 3/31/16 Time: 1250
 Relinquished by: Christa Walt Received by: Jane Rasmussen Date: 04/10/16 Time: 0750

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.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 01, 2017

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Shutdown

OrderNo.: 1604003

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/1/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 05, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-8

Project: GBR Shutdown

Collection Date: 3/31/2016 9:45:00 AM

Lab ID: 1604003-001

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	58	1.0		mg/L	1	4/1/2016 7:25:50 PM
Surr: DNOP	111	70-141		%Rec	1	4/1/2016 7:25:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	4/2/2016 12:22:36 AM
Surr: BFB	85.1	49.5-130	D	%Rec	5	4/2/2016 12:22:36 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604003

Date Reported: 3/1/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-20

Project: GBR Shutdown

Collection Date: 3/31/2016 10:00:00 AM

Lab ID: 1604003-002

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	6.9	1.0		mg/L	1	4/1/2016 7:47:26 PM
Surr: DNOP	106	70-141		%Rec	1	4/1/2016 7:47:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.33	0.25	D	mg/L	5	4/2/2016 12:46:58 AM
Surr: BFB	102	49.5-130	D	%Rec	5	4/2/2016 12:46:58 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical ReportLab Order **1604003**

Date Reported: 3/1/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-11**Project:** GBR Shutdown**Collection Date:** 3/31/2016 10:30:00 AM**Lab ID:** 1604003-003**Matrix:** AQUEOUS**Received Date:** 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	5.0	1.0		mg/L	1	4/1/2016 8:08:49 PM
Surr: DNOP	105	70-141		%Rec	1	4/1/2016 8:08:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.28	0.25	D	mg/L	5	4/2/2016 1:11:31 AM
Surr: BFB	87.2	49.5-130	D	%Rec	5	4/2/2016 1:11:31 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604003

Date Reported: 3/1/2017

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-34

Project: GBR Shutdown

Collection Date: 3/31/2016 11:15:00 AM

Lab ID: 1604003-004

Matrix: AQUEOUS

Received Date: 4/1/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	560	10		mg/L	10	4/4/2016 9:01:21 AM
Surr: DNOP	0	70-141	S	%Rec	10	4/4/2016 9:01:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	1.9	0.25	D	mg/L	5	4/2/2016 1:36:05 AM
Surr: BFB	154	49.5-130	SD	%Rec	5	4/2/2016 1:36:05 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604003

01-Mar-17

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	LCS-24574		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24574		RunNo: 33232					
Prep Date:	4/1/2016		Analysis Date: 4/1/2016		SeqNo: 1020954		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.8	71.3	139			
Surr: DNOP	0.51		0.5000		101	70	141			

Sample ID	MB-24574		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 24574		RunNo: 33232					
Prep Date:	4/1/2016		Analysis Date: 4/1/2016		SeqNo: 1020955		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	1.1		1.000		108	70	141			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604003

01-Mar-17

Client: Western Refining Southwest, Inc.

Project: GBR Shutdown

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021770	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.3	80	120			
Surr: BFB	19		20.00		95.7	49.5	130			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R33266	RunNo:	33266					
Prep Date:		Analysis Date:	4/1/2016	SeqNo:	1021771	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.1	49.5	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1604003

RcptNo: 1

Received by/date:

Ja

04/01/16

Logged By:

Joe Archuleta

4/1/2016 7:50:00 AM

Ja

Completed By:

Joe Archuleta

4/1/2016 8:33:34 AM

Ja

Reviewed By:

Ja/AS

04/01/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Client: Kelly Robinson
Musket Refining
Billing Address: 111 CR 4790
Bloomfield, NM
Phone #: 970-385-1076
Email or Fax#: dhencmann@kennebec.com
AQC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☒ NELAP ☐ Other _____
☒ EDD (Type) _____

☒ Standard ☐ Rush

GBR Shutdown

Project #: WR1009

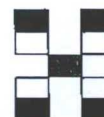
Project Manager:

Derwin Hennemann

Sampler: Alex Crooks

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
3/31	1250	Alex Grook	Mark Walter	3/31/16	1250
ate:	Time:	Relinquished by:	Received by:	Date	Time
3/31/16	1747	Mark Walter	Pat. Ant	04/01/16	0750

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.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 01, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: GBR Quarterly

OrderNo.: 1607E58

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/27/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1607E58

Date Reported: 8/1/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-22

Project: GBR Quarterly

Collection Date: 7/25/2016 6:05:00 PM

Lab ID: 1607E58-001

Matrix: AQUEOUS

Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	330	50	*	mg/L	100	7/28/2016 4:11:26 PM	R36069
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	DP	µg/L	5	7/28/2016 3:42:20 PM	B36094
Toluene	ND	5.0	DP	µg/L	5	7/28/2016 3:42:20 PM	B36094
Ethylbenzene	41	5.0	DP	µg/L	5	7/28/2016 3:42:20 PM	B36094
Xylenes, Total	16	10	DP	µg/L	5	7/28/2016 3:42:20 PM	B36094
Surr: 4-Bromofluorobenzene	120	87.9-146	DP	%Rec	5	7/28/2016 3:42:20 PM	B36094

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order 1607E58

Date Reported: 8/1/2016

CLIENT: Western Refining Southwest, Inc.**Client Sample ID:** GBR-25**Project:** GBR Quarterly**Collection Date:** 7/25/2016 5:25:00 PM**Lab ID:** 1607E58-002**Matrix:** AQUEOUS**Received Date:** 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	450	50	*	mg/L	100	7/28/2016 4:36:15 PM	R36069
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	DP	µg/L	5	7/28/2016 4:06:52 PM	B36094
Toluene	ND	5.0	DP	µg/L	5	7/28/2016 4:06:52 PM	B36094
Ethylbenzene	16	5.0	DP	µg/L	5	7/28/2016 4:06:52 PM	B36094
Xylenes, Total	ND	10	DP	µg/L	5	7/28/2016 4:06:52 PM	B36094
Surr: 4-Bromofluorobenzene	118	87.9-146	DP	%Rec	5	7/28/2016 4:06:52 PM	B36094

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1607E58

Date Reported: 8/1/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-21D**Project:** GBR Quarterly**Collection Date:** 7/25/2016 4:25:00 PM**Lab ID:** 1607E58-003**Matrix:** AQUEOUS**Received Date:** 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	340	50	*	mg/L	100	7/28/2016 5:01:05 PM	R36069
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	7/28/2016 6:09:22 PM	B36094
Toluene	ND	5.0	D	µg/L	5	7/28/2016 6:09:22 PM	B36094
Ethylbenzene	ND	5.0	D	µg/L	5	7/28/2016 6:09:22 PM	B36094
Xylenes, Total	ND	10	D	µg/L	5	7/28/2016 6:09:22 PM	B36094
Surr: 4-Bromofluorobenzene	107	87.9-146	D	%Rec	5	7/28/2016 6:09:22 PM	B36094

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E58

01-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R36069			RunNo: 36069						
Prep Date:		Analysis Date: 7/28/2016			SeqNo: 1116921		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R36069			RunNo: 36069						
Prep Date:		Analysis Date: 7/28/2016			SeqNo: 1116922		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.9	0.50	5.000	0	97.9	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E58

01-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	100NG BTEX LCS	SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID: B36094			RunNo: 36094					
Prep Date:		Analysis Date: 7/28/2016			SeqNo: 1117971		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.8	80	120			
Toluene	20	1.0	20.00	0	99.5	80	120			
Ethylbenzene	19	1.0	20.00	0	94.8	80	120			
Xylenes, Total	57	2.0	60.00	0	94.7	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		108	87.9	146			

Sample ID	RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID: B36094			RunNo: 36094					
Prep Date:		Analysis Date: 7/28/2016			SeqNo: 1117993		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	20		20.00		99.7	87.9	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1607E58

RcptNo: 1

Received by/date:	AS	07/27/16	
Logged By:	Joe Archuleta	7/27/2016 8:00:00 AM	JEL
Completed By:	Joe Archuleta	7/28/2016 9:09:17 AM	JEL
Reviewed By:	AS	07/28/16	

Chain of Custody

- | | | | |
|--|---|-----------------------------|---|
| 1. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 2. Is Chain of Custody complete? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 3. How was the sample delivered? | Courier | | |

Log In

- | | | | |
|---|---|--|---------------------------------------|
| 4. Was an attempt made to cool the samples? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 6. Sample(s) in proper container(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Sufficient sample volume for indicated test(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Was preservative added to bottles? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 10. VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 14. Is it clear what analyses were requested? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 02, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: GBR Quarterly

OrderNo.: 1607E59

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/27/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1607E59

Date Reported: 8/2/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-22**Project:** GBR Quarterly**Collection Date:** 7/25/2016 6:05:00 PM**Lab ID:** 1607E59-001**Matrix:** AQUEOUS**Received Date:** 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	4800	100		mg/L	100	8/1/2016 9:44:07 AM	26687
Surr: DNOP	0	77.1-144	S	%Rec	100	8/1/2016 9:44:07 AM	26687
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	0.90	0.25	DP	mg/L	5	7/28/2016 6:33:43 PM	R36094
Surr: BFB	122	66.4-120	SDP	%Rec	5	7/28/2016 6:33:43 PM	R36094

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1607E59

Date Reported: 8/2/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-25

Project: GBR Quarterly

Collection Date: 7/25/2016 5:25:00 PM

Lab ID: 1607E59-002

Matrix: AQUEOUS

Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	190	10		mg/L	10	7/29/2016 4:59:57 PM	26687
Surr: DNOP	0	77.1-144	S	%Rec	10	7/29/2016 4:59:57 PM	26687
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	1.1	0.25	D	mg/L	5	7/28/2016 7:46:46 PM	R36094
Surr: BFB	132	66.4-120	SD	%Rec	5	7/28/2016 7:46:46 PM	R36094

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1607E59

Date Reported: 8/2/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-21D**Project:** GBR Quarterly**Collection Date:** 7/25/2016 4:25:00 PM**Lab ID:** 1607E59-003**Matrix:** AQUEOUS**Received Date:** 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	21	1.0		mg/L	1	7/29/2016 5:28:08 PM	26687
Surr: DNOP	94.0	77.1-144		%Rec	1	7/29/2016 5:28:08 PM	26687
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	7/28/2016 8:11:09 PM	R36094
Surr: BFB	96.8	66.4-120	D	%Rec	5	7/28/2016 8:11:09 PM	R36094

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E59

02-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID MB-26687	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range							
Client ID: PBW	Batch ID: 26687		RunNo: 36084							
Prep Date: 7/29/2016	Analysis Date: 7/29/2016		SeqNo: 1118338		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.88		1.000		88.1	77.1	144			

Sample ID LCS-26687	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range							
Client ID: LCSW	Batch ID: 26687		RunNo: 36084							
Prep Date: 7/29/2016	Analysis Date: 7/29/2016		SeqNo: 1118339		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.5	71.3	139			
Surr: DNOP	0.47		0.5000		93.7	77.1	144			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E59

02-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	1607E59-001A MS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	GBR-22	Batch ID:	R36094	RunNo:	36094					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1117944	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.8	0.25	2.500	0.8970	76.4	70	130			DP
Surr: BFB	140		100.0		140	66.4	120			SDP

Sample ID	1607E59-001A MSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	GBR-22	Batch ID:	R36094	RunNo:	36094					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1117945	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.7	0.25	2.500	0.8970	73.8	70	130	2.34	20	D
Surr: BFB	150		100.0		148	66.4	120	0	0	SD

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R36094	RunNo:	36094					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1117956	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.9	80	120			
Surr: BFB	19		20.00		93.7	66.4	120			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R36094	RunNo:	36094					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1117957	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.1	66.4	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1607E59

RcptNo: 1

Received by/date:	<u>AJ</u>	<u>07/27/16</u>
Logged By:	Joe Archuleta	7/27/2016 8:00:00 AM <u>JE</u>
Completed By:	Joe Archuleta	7/28/2016 9:19:58 AM <u>JE</u>
Reviewed By:	<u>aj</u>	<u>07/28/16</u>

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: <u>Western Refining</u>		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
<u>Kelly Robinson</u>		Project Name:	
Mailing Address: <u>111 CR 4990</u>		<u>GBR Quarterly</u>	
<u>Bloomfield, NM</u>		Project #:	
Phone #:		<u>PO # 12614068</u>	
email or Fax#:		Project Manager:	
QA/QC Package:		<u>Kelly Robinson</u>	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: <u>Michael A Wicker</u>	
Accreditation		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		Sample Temperature: <u>53°C/121°F</u>	
<input type="checkbox"/> EDD (Type) _____			

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 02, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Quarterly

OrderNo.: 1607E67

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/28/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-8

Project: GBR Quarterly

Collection Date: 7/26/2016 5:55:00 PM

Lab ID: 1607E67-001

Matrix: AQUEOUS

Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: TOM
Diesel Range Organics (DRO)	280	10		mg/L	10	7/29/2016 5:56:11 PM
Surr: DNOP	0	77.1-144	S	%Rec	10	7/29/2016 5:56:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.45	0.25	D	mg/L	5	7/28/2016 8:35:30 PM
Surr: BFB	109	66.4-120	D	%Rec	5	7/28/2016 8:35:30 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1607E67

Date Reported: 8/2/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-11

Project: GBR Quarterly

Collection Date: 7/26/2016 6:30:00 PM

Lab ID: 1607E67-002

Matrix: AQUEOUS

Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: TOM
Diesel Range Organics (DRO)	5.3	1.0		mg/L	1	7/29/2016 6:23:59 PM
Surr: DNOP	94.6	77.1-144		%Rec	1	7/29/2016 6:23:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	7/28/2016 8:59:46 PM
Surr: BFB	83.9	66.4-120	D	%Rec	5	7/28/2016 8:59:46 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1607E67

Date Reported: 8/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-34

Project: GBR Quarterly

Collection Date: 7/26/2016 4:30:00 PM

Lab ID: 1607E67-003

Matrix: AQUEOUS

Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: KJH
Diesel Range Organics (DRO)	1400	100		mg/L	100	8/1/2016 10:11:40 AM
Surr: DNOP	0	77.1-144	S	%Rec	100	8/1/2016 10:11:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	1.7	0.25	DP	mg/L	5	7/28/2016 9:24:01 PM
Surr: BFB	134	66.4-120	SDP	%Rec	5	7/28/2016 9:24:01 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1607E67

Date Reported: 8/2/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-2

Project: GBR Quarterly

Collection Date: 7/26/2016 7:05:00 PM

Lab ID: 1607E67-004

Matrix: AQUEOUS

Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: TOM
Diesel Range Organics (DRO)	47	10		mg/L	10	7/29/2016 7:19:35 PM
Surr: DNOP	0	77.1-144	S	%Rec	10	7/29/2016 7:19:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.36	0.25	D	mg/L	5	7/28/2016 9:48:14 PM
Surr: BFB	95.7	66.4-120	D	%Rec	5	7/28/2016 9:48:14 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Quarterly

Collection Date: 7/26/2016 8:00:00 PM

Lab ID: 1607E67-005

Matrix: AQUEOUS

Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: TOM
Diesel Range Organics (DRO)	92	10		mg/L	10	7/29/2016 7:47:22 PM
Surr: DNOP	0	77.1-144	S	%Rec	10	7/29/2016 7:47:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	0.46	0.25	DP	mg/L	5	7/28/2016 10:12:23 PM
Surr: BFB	114	66.4-120	DP	%Rec	5	7/28/2016 10:12:23 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E67

02-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	MB-26687	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 26687			RunNo: 36084					
Prep Date:	7/29/2016	Analysis Date: 7/29/2016			SeqNo: 1118338		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.88		1.000		88.1	77.1	144			

Sample ID	LCS-26687		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 26687		RunNo: 36084					
Prep Date:	7/29/2016		Analysis Date: 7/29/2016		SeqNo: 1118339		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.5	71.3	139			
Surr: DNOP	0.47		0.5000		93.7	77.1	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E67

02-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R36094	RunNo:	36094					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1117956	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.9	80	120			
Surr: BFB	19		20.00		93.7	66.4	120			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R36094	RunNo:	36094					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1117957	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.1	66.4	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1607E67

RcptNo: 1

Received by/date:	<i>[Signature]</i>	07/28/10
Logged By:	Lindsay Mangin	7/28/2016 7:30:00 AM
Completed By:	Lindsay Mangin	7/28/2016 9:56:31 AM
Reviewed By:	<i>AG</i>	07/28/10

Chain of Custody

- | | | | |
|--|---|-----------------------------|---|
| 1. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 2. Is Chain of Custody complete? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 3. How was the sample delivered? | Courier | | |

Log In

- | | | | |
|---|---|--|---------------------------------------|
| 4. Was an attempt made to cool the samples? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 6. Sample(s) in proper container(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Sufficient sample volume for indicated test(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Was preservative added to bottles? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 10. VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 14. Is it clear what analyses were requested? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: <u>Kelly Robinson</u>		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
<u>Western Refining</u>		Project Name:	
Mailing Address: <u>111 CR 4990</u>		<u>GBR Quarterly</u>	
<u>Bloomfield, NM</u>		Project #:	
Phone #:		<u>PO# 12614068</u>	
email or Fax#:		Project Manager:	
QA/QC Package:		<u>Kelly Robinson</u>	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: <u>Michael A Wicker</u>	
Accreditation		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		Sample Temperature: <u>27-100 = 17</u>	
<input type="checkbox"/> EDD (Type) _____			

☒ Standard ☐ Rush

GBR Quarterly

PO# 12614068

Kelly Robinson

Sampler: Michael A Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature 2.7-1.0 F = 1.7

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
7-27-16	1140	<i>[Signature]</i>	Christine Wachs	7/27/16	1140
Date:	Time:	Relinquished by:	Received by:	Date	Time
7/27/16	1855	Christ Wachs	<i>[Signature]</i>	07/28/16	0730

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Remarks: Please CC: DHenemann@LTEMV.com
MWicker@LTEMV.com

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 01, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Quarterly

OrderNo.: 1607E78

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/28/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1607E78

Date Reported: 8/1/2016

CLIENT: Western Refining Southwest, Inc.
Project: GBR Quarterly

Lab Order: 1607E78

Lab ID: 1607E78-001

Collection Date: 7/26/2016 5:55:00 PM

Client Sample ID: GBR-8

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	97	5.0		mg/L	10	7/28/2016 5:13:30 PM	R36065
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	7/28/2016 10:36:30 PM	B36094
Toluene	ND	5.0	D	µg/L	5	7/28/2016 10:36:30 PM	B36094
Ethylbenzene	ND	5.0	D	µg/L	5	7/28/2016 10:36:30 PM	B36094
Xylenes, Total	ND	10	D	µg/L	5	7/28/2016 10:36:30 PM	B36094
Surr: 4-Bromofluorobenzene	111	87.9-146	D	%Rec	5	7/28/2016 10:36:30 PM	B36094

Lab ID: 1607E78-002

Collection Date: 7/26/2016 6:30:00 PM

Client Sample ID: GBR-11

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	93	5.0		mg/L	10	7/28/2016 11:25:48 PM	A36065
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	7/28/2016 11:00:44 PM	B36094
Toluene	ND	5.0	D	µg/L	5	7/28/2016 11:00:44 PM	B36094
Ethylbenzene	ND	5.0	D	µg/L	5	7/28/2016 11:00:44 PM	B36094
Xylenes, Total	ND	10	D	µg/L	5	7/28/2016 11:00:44 PM	B36094
Surr: 4-Bromofluorobenzene	110	87.9-146	D	%Rec	5	7/28/2016 11:00:44 PM	B36094

Lab ID: 1607E78-003

Collection Date: 7/26/2016 4:30:00 PM

Client Sample ID: GBR-34

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	180	50		mg/L	100	7/28/2016 6:40:22 PM	R36065
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	DP	µg/L	5	7/28/2016 11:24:58 PM	B36094
Toluene	ND	5.0	DP	µg/L	5	7/28/2016 11:24:58 PM	B36094
Ethylbenzene	34	5.0	DP	µg/L	5	7/28/2016 11:24:58 PM	B36094
Xylenes, Total	43	10	DP	µg/L	5	7/28/2016 11:24:58 PM	B36094
Surr: 4-Bromofluorobenzene	109	87.9-146	DP	%Rec	5	7/28/2016 11:24:58 PM	B36094

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	Page 1 of 4
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order: 1607E78

Date Reported: 8/1/2016

CLIENT: Western Refining Southwest, Inc.
Project: GBR Quarterly**Lab Order:** 1607E78**Lab ID:** 1607E78-004**Collection Date:** 7/26/2016 7:15:00 PM**Client Sample ID:** SHS-2**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	250	50		mg/L	100	7/28/2016 7:05:11 PM	R36069
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	D	µg/L	5	7/28/2016 11:49:11 PM	B36094
Toluene	ND	5.0	D	µg/L	5	7/28/2016 11:49:11 PM	B36094
Ethylbenzene	ND	5.0	D	µg/L	5	7/28/2016 11:49:11 PM	B36094
Xylenes, Total	ND	10	D	µg/L	5	7/28/2016 11:49:11 PM	B36094
Surr: 4-Bromofluorobenzene	108	87.9-146	D	%Rec	5	7/28/2016 11:49:11 PM	B36094

Lab ID: 1607E78-005**Collection Date:** 7/26/2016 8:00:00 PM**Client Sample ID:** SHS-8**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	120	5.0		mg/L	10	7/28/2016 7:17:36 PM	R36069
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	5.0	DP	µg/L	5	7/29/2016 12:13:17 AM	B36094
Toluene	ND	5.0	DP	µg/L	5	7/29/2016 12:13:17 AM	B36094
Ethylbenzene	ND	5.0	DP	µg/L	5	7/29/2016 12:13:17 AM	B36094
Xylenes, Total	ND	10	DP	µg/L	5	7/29/2016 12:13:17 AM	B36094
Surr: 4-Bromofluorobenzene	104	87.9-146	DP	%Rec	5	7/29/2016 12:13:17 AM	B36094

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E78

01-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R36069	RunNo:	36069					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1116921	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R36069	RunNo:	36069					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1116922	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.9	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A36069	RunNo:	36069					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1116969	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A36069	RunNo:	36069					
Prep Date:		Analysis Date:	7/28/2016	SeqNo:	1116970	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.8	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607E78

01-Aug-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	100NG BTEX LCS	SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID: B36094			RunNo: 36094					
Prep Date:		Analysis Date: 7/28/2016			SeqNo: 1117971		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.8	80	120			
Toluene	20	1.0	20.00	0	99.5	80	120			
Ethylbenzene	19	1.0	20.00	0	94.8	80	120			
Xylenes, Total	57	2.0	60.00	0	94.7	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		108	87.9	146			

Sample ID	RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID: B36094			RunNo: 36094					
Prep Date:		Analysis Date: 7/28/2016			SeqNo: 1117993		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	20		20.00		99.7	87.9	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1607E78

RptNo: 1

Received by/date:		07/28/16
Logged By:	Lindsay Mangin	7/28/2016 7:30:00 AM
Completed By:	Lindsay Mangin	7/28/2016 10:27:22 AM
Reviewed By:		07/28/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Ident: Kelly Robinson		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
Western Refining		Project Name:	
Billing Address: 111 CR 4990		GBR Quarterly	
Bloomfield, NM		Project #:	
Phone #:		PO# 12614068	
Mail or Fax#:		Project Manager:	
VQC Package:		Kelly Robinson	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: Michael A Wicker	
Accreditation		On Ice <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
NELAP <input type="checkbox"/> Other		Sample Temperature: 2.7 - 1.0 - 1.7	
EDD (Type)			

☒ Standard ☐ Rush

GBR Quarterly

DO# 12614068

Kelly Robinson

On Ice ☒ Yes ☐ No



Sample Temperature: 2.7-1.05-1.5



4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
27-16	1140		Christine Warrick	7/27/16	1140
ate:	Time:	Relinquished by:	Received by:	Date	Time
17/16	1855	Christine Warrick		07/28/16	0731

Remarks: Please CC: DHenemann@LTEnv.com
MWicker@LTEnv.com

GBR-34 is NOT HCl Preserved

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 26, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Quarterly

OrderNo.: 1610A95

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 7 sample(s) on 10/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 1610A95

Date Reported: 10/26/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: GBR Quarterly

Lab Order: 1610A95

Lab ID: 1610A95-001

Collection Date: 10/20/2016 10:15:00 AM

Client Sample ID: GBR-26

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	1.4	1.0		mg/L	1	10/25/2016 12:43:26 PM	28230
Surr: DNOP	128	77.1-144		%Rec	1	10/25/2016 12:43:26 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/24/2016 7:19:43 PM	G38157
Surr: BFB	86.4	66.4-120	D	%Rec	5	10/24/2016 7:19:43 PM	G38157

Lab ID: 1610A95-002

Collection Date: 10/20/2016 10:40:00 AM

Client Sample ID: GBR-21D

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	11	1.0		mg/L	1	10/25/2016 1:05:16 PM	28230
Surr: DNOP	133	77.1-144		%Rec	1	10/25/2016 1:05:16 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/24/2016 8:32:18 PM	G38157
Surr: BFB	92.2	66.4-120	D	%Rec	5	10/24/2016 8:32:18 PM	G38157

Lab ID: 1610A95-003

Collection Date: 10/20/2016 11:10:00 AM

Client Sample ID: GBR-25

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	96	1.0		mg/L	1	10/25/2016 1:27:05 PM	28230
Surr: DNOP	136	77.1-144		%Rec	1	10/25/2016 1:27:05 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.73	0.25		mg/L	5	10/24/2016 8:56:26 PM	G38157
Surr: BFB	116	66.4-120		%Rec	5	10/24/2016 8:56:26 PM	G38157

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	Page 1 of 6
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1610A95

Date Reported: 10/26/2016

CLIENT: Western Refining Southwest, Inc.
Project: GBR Quarterly

Lab Order: 1610A95

Lab ID: 1610A95-004

Collection Date: 10/20/2016 11:45:00 AM

Client Sample ID: GBR-22

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	260	10		mg/L	10	10/25/2016 3:15:19 PM	28230
Surr: DNOP	0	77.1-144	S	%Rec	10	10/25/2016 3:15:19 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.44	0.25		mg/L	5	10/24/2016 9:20:32 PM	G38157
Surr: BFB	105	66.4-120		%Rec	5	10/24/2016 9:20:32 PM	G38157

Lab ID: 1610A95-005

Collection Date: 10/20/2016 12:25:00 PM

Client Sample ID: GBR-34

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	2700	100		mg/L	100	10/25/2016 3:36:59 PM	28230
Surr: DNOP	0	77.1-144	S	%Rec	100	10/25/2016 3:36:59 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2.0	0.25		mg/L	5	10/24/2016 11:21:04 PM	G38157
Surr: BFB	158	66.4-120	S	%Rec	5	10/24/2016 11:21:04 PM	G38157

Lab ID: 1610A95-006

Collection Date: 10/20/2016 2:10:00 PM

Client Sample ID: GBR-20

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	22	1.0		mg/L	1	10/25/2016 2:32:01 PM	28230
Surr: DNOP	139	77.1-144		%Rec	1	10/25/2016 2:32:01 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/25/2016 12:16:12 PM	G38203
Surr: BFB	110	66.4-120	D	%Rec	5	10/25/2016 12:16:12 PM	G38203

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1610A95

Date Reported: 10/26/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Lab Order:** 1610A95**Project:** GBR Quarterly**Lab ID:** 1610A95-007**Collection Date:** 10/20/2016 3:45:00 PM**Client Sample ID:** GBR-8**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	190	10		mg/L	10	10/25/2016 3:58:31 PM	28230
Surr: DNOP	0	77.1-144	S	%Rec	10	10/25/2016 3:58:31 PM	28230
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/25/2016 1:29:16 PM	G3820
Surr: BFB	85.2	66.4-120	D	%Rec	5	10/25/2016 1:29:16 PM	G3820

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610A95

26-Oct-16

Client: Western Refining Southwest, Inc.
Project: GBR Quarterly

Sample ID	LCS-28230		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 28230		RunNo: 38182					
Prep Date:	10/24/2016		Analysis Date: 10/25/2016		SeqNo: 1191909		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	63.2	155			
Surr: DNOP	0.57		0.5000		113	77.1	144			

Sample ID	MB-28230	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW	Batch ID:	28230		RunNo:	38182				
Prep Date:	10/24/2016	Analysis Date:	10/25/2016		SeqNo:	1191910	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	1.2		1.000		118	77.1	144			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610A95

26-Oct-16

Client: Western Refining Southwest, Inc.
Project: GBR Quarterly

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	G38157	RunNo:	38157					
Prep Date:		Analysis Date:	10/24/2016	SeqNo:	1191191	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		92.6	66.4	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	G38157	RunNo:	38157					
Prep Date:		Analysis Date:	10/24/2016	SeqNo:	1191192	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	80	120			
Surr: BFB	18		20.00		89.4	66.4	120			

Sample ID	1610A95-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	GBR-26	Batch ID:	G38157	RunNo:	38157					
Prep Date:		Analysis Date:	10/24/2016	SeqNo:	1191197	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.6	0.25	2.500	0	104	70	130			
Surr: BFB	97		100.0		96.8	66.4	120			

Sample ID	1610A95-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	GBR-26	Batch ID:	G38157	RunNo:	38157					
Prep Date:		Analysis Date:	10/24/2016	SeqNo:	1191198	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	2.5	0.25	2.500	0	101	70	130	2.68	20	
Surr: BFB	99		100.0		98.6	66.4	120	0	0	

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	G38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192307	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		82.5	66.4	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	G38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192308	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610A95

26-Oct-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	LCSW	Batch ID:	G38203	RunNo:	38203						
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192308	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.6	80	120				
Surr: BFB	18		20.00		90.9	66.4	120				

Sample ID	1610A95-006AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	GBR-20	Batch ID:	G38203	RunNo:	38203						
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192310	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	2.9	0.25	2.500	0.4640	99.4	64.8	129			D	
Surr: BFB	120		100.0		116	66.4	120			D	

Sample ID	1610A95-006AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	GBR-20	Batch ID:	G38203	RunNo:	38203						
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192312	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	3.0	0.25	2.500	0.4640	102	64.8	129	2.11	20	D	
Surr: BFB	120		100.0		118	66.4	120	0	0	D	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory
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 Southw

Work Order Number: 1610A95

RcptNo: 1

Received by/date:

LC

10/21/16

Logged By: Lindsay Mangin

10/21/2016 8:15:00 AM

[Signature]

Completed By: Lindsay Mangin

10/21/2016 2:08:23 PM

[Signature]

Reviewed By:

[Signature]

10/24/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Chain-of-Custody Record

Client: Western Refining
Kelly Robinson
Mailing Address: 111 CR 4990
Bloomfield, NM
Phone #: _____
email or Fax#: Dhencmann@Henv.com
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: GBR Quarry
Project #: #12614068
Project Manager: Devin Hencmann
Sampler: Alex Crooks
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.1



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MBO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)								Air Bubbles (Y or N)
		X																

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
10/20	1015	AQ	GBR-26	1-Amber	cool	-001
	1040		GBR-21D			-002
	1110		GBR-25			-003
	1143		GBR-22			-004
	1225		GBR-34			-005
	1410		GBR-20			-006
	1543		GBR-8			-007

Date: 10/20/16 Time: 1517 Relinquished by: Alex Crooks
Date: 10/20/16 Time: 2045 Relinquished by: Christen Waack
Received by: Christen Waack Date: 10/20/16 Time: 1517
Received by: Rindsey Coneha Date: 10/21/16 Time: 0815

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.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 31, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Quarterly

OrderNo.: 1610A99

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 7 sample(s) on 10/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610A99

Date Reported: 10/31/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-26

Project: GBR Quarterly

Collection Date: 10/20/2016 10:15:00 AM

Lab ID: 1610A99-001

Matrix: AQUEOUS

Received Date: 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	67	2.5		mg/L	5	10/24/2016 8:45:39 PM	R38161
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/24/2016 7:19:43 PM	B38157
Toluene	ND	5.0	D	µg/L	5	10/24/2016 7:19:43 PM	B38157
Ethylbenzene	ND	5.0	D	µg/L	5	10/24/2016 7:19:43 PM	B38157
Xylenes, Total	ND	10	D	µg/L	5	10/24/2016 7:19:43 PM	B38157
Surr: 4-Bromofluorobenzene	101	87.9-146	D	%Rec	5	10/24/2016 7:19:43 PM	B38157

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order 1610A99

Date Reported: 10/31/2016

CLIENT: Western Refining Southwest, Inc.**Client Sample ID:** GBR-21D**Project:** GBR Quarterly**Collection Date:** 10/20/2016 10:40:00 AM**Lab ID:** 1610A99-002**Matrix:** AQUEOUS**Received Date:** 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	390	10	*	mg/L	20	10/24/2016 9:22:52 PM	R38161
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/24/2016 8:32:18 PM	B38157
Toluene	ND	5.0	D	µg/L	5	10/24/2016 8:32:18 PM	B38157
Ethylbenzene	ND	5.0	D	µg/L	5	10/24/2016 8:32:18 PM	B38157
Xylenes, Total	ND	10	D	µg/L	5	10/24/2016 8:32:18 PM	B38157
Surr: 4-Bromofluorobenzene	109	87.9-146	D	%Rec	5	10/24/2016 8:32:18 PM	B38157

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610A99

Date Reported: 10/31/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-25

Project: GBR Quarterly

Collection Date: 10/20/2016 11:10:00 AM

Lab ID: 1610A99-003

Matrix: AQUEOUS

Received Date: 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	630	25	*	mg/L	50	10/27/2016 4:43:46 AM	A38228
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/24/2016 8:56:26 PM	B38157
Toluene	ND	5.0	D	µg/L	5	10/24/2016 8:56:26 PM	B38157
Ethylbenzene	11	5.0	D	µg/L	5	10/24/2016 8:56:26 PM	B38157
Xylenes, Total	ND	10	D	µg/L	5	10/24/2016 8:56:26 PM	B38157
Surr: 4-Bromofluorobenzene	111	87.9-146	D	%Rec	5	10/24/2016 8:56:26 PM	B38157

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610A99

Date Reported: 10/31/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-22

Project: GBR Quarterly

Collection Date: 10/20/2016 11:45:00 AM

Lab ID: 1610A99-004

Matrix: AQUEOUS

Received Date: 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	400	10	*	mg/L	20	10/24/2016 10:37:19 PM	R38161
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/24/2016 9:20:32 PM	B38157
Toluene	ND	5.0	D	µg/L	5	10/24/2016 9:20:32 PM	B38157
Ethylbenzene	15	5.0	D	µg/L	5	10/24/2016 9:20:32 PM	B38157
Xylenes, Total	ND	10	D	µg/L	5	10/24/2016 9:20:32 PM	B38157
Surr: 4-Bromofluorobenzene	104	87.9-146	D	%Rec	5	10/24/2016 9:20:32 PM	B38157

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610A99

Date Reported: 10/31/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-34

Project: GBR Quarterly

Collection Date: 10/20/2016 12:25:00 PM

Lab ID: 1610A99-005

Matrix: AQUEOUS

Received Date: 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	180	10		mg/L	20	10/24/2016 11:02:09 PM	R38161
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/24/2016 11:21:04 PM	B38157
Toluene	ND	5.0	D	µg/L	5	10/24/2016 11:21:04 PM	B38157
Ethylbenzene	160	5.0	D	µg/L	5	10/24/2016 11:21:04 PM	B38157
Xylenes, Total	60	10	D	µg/L	5	10/24/2016 11:21:04 PM	B38157
Surr: 4-Bromofluorobenzene	128	87.9-146	D	%Rec	5	10/24/2016 11:21:04 PM	B38157

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610A99

Date Reported: 10/31/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-20

Project: GBR Quarterly

Collection Date: 10/20/2016 2:10:00 PM

Lab ID: 1610A99-006

Matrix: AQUEOUS

Received Date: 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	72	10		mg/L	20	10/24/2016 11:26:57 PM	R38161
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	5.7	5.0	D	µg/L	5	10/25/2016 12:16:12 PM	B38203
Toluene	ND	5.0	D	µg/L	5	10/25/2016 12:16:12 PM	B38203
Ethylbenzene	24	5.0	D	µg/L	5	10/25/2016 12:16:12 PM	B38203
Xylenes, Total	ND	10	D	µg/L	5	10/25/2016 12:16:12 PM	B38203
Surr: 4-Bromofluorobenzene	104	87.9-146	D	%Rec	5	10/25/2016 12:16:12 PM	B38203

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1610A99

Date Reported: 10/31/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-8

Project: GBR Quarterly

Collection Date: 10/20/2016 3:45:00 PM

Lab ID: 1610A99-007

Matrix: AQUEOUS

Received Date: 10/21/2016 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	95	10		mg/L	20	10/25/2016 12:41:25 AM	R38179
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/25/2016 1:29:16 PM	B38203
Toluene	ND	5.0	D	µg/L	5	10/25/2016 1:29:16 PM	B38203
Ethylbenzene	ND	5.0	D	µg/L	5	10/25/2016 1:29:16 PM	B38203
Xylenes, Total	ND	10	D	µg/L	5	10/25/2016 1:29:16 PM	B38203
Surr: 4-Bromofluorobenzene	94.7	87.9-146	D	%Rec	5	10/25/2016 1:29:16 PM	B38203

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610A99

31-Oct-16

Client: Western Refining Southwest, Inc.
Project: GBR Quarterly

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R38161		RunNo: 38161							
Prep Date:	Analysis Date: 10/24/2016		SeqNo: 1191003		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R38161		RunNo: 38161							
Prep Date:	Analysis Date: 10/24/2016		SeqNo: 1191004		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.3	90	110			

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R38179		RunNo: 38179							
Prep Date:	Analysis Date: 10/24/2016		SeqNo: 1191729		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R38179		RunNo: 38179							
Prep Date:	Analysis Date: 10/24/2016		SeqNo: 1191730		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.9	90	110			

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A38228		RunNo: 38228							
Prep Date:	Analysis Date: 10/26/2016		SeqNo: 1194068		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A38228		RunNo: 38228							
Prep Date:	Analysis Date: 10/26/2016		SeqNo: 1194069		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.5	0.50	5.000	0	90.6	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610A99
31-Oct-16

Client: Western Refining Southwest, Inc.
Project: GBR Quarterly

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	B38157	RunNo:	38157					
Prep Date:		Analysis Date:	10/24/2016	SeqNo:	1191208	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	22		20.00		112	87.9	146			

Sample ID	100NG BTEX LCSB	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	B38157	RunNo:	38157					
Prep Date:		Analysis Date:	10/24/2016	SeqNo:	1191209	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	16	2.5	20.00	0	81.8	80	120			
Benzene	18	1.0	20.00	0	88.0	80	120			
Toluene	18	1.0	20.00	0	88.3	80	120			
Ethylbenzene	17	1.0	20.00	0	85.5	80	120			
Xylenes, Total	55	2.0	60.00	0	91.6	80	120			
1,2,4-Trimethylbenzene	19	1.0	20.00	0	95.0	80	120			
1,3,5-Trimethylbenzene	18	1.0	20.00	0	88.4	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		108	87.9	146			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	B38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192321	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.0	87.9	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610A99

31-Oct-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

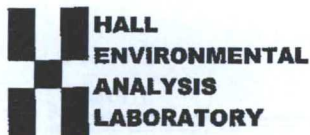
Sample ID	100NG BTEX LCS		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSW		Batch ID:	B38203		RunNo:	38203			
Prep Date:			Analysis Date:	10/25/2016		SeqNo:	1192322		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	16	2.5	20.00	0	80.3	80	120			
Benzene	18	1.0	20.00	0	88.3	80	120			
Toluene	18	1.0	20.00	0	88.8	80	120			
Ethylbenzene	18	1.0	20.00	0	90.5	80	120			
Xylenes, Total	59	2.0	60.00	0	98.4	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	101	80	120			
1,3,5-Trimethylbenzene	19	1.0	20.00	0	95.1	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		96.1	87.9	146			

Sample ID	1610A99-007AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	GBR-8		Batch ID:	B38203		RunNo:	38203			
Prep Date:			Analysis Date:	10/25/2016		SeqNo:	1192327		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	82	12	100.0	0	81.9	63.4	127			D
Benzene	86	5.0	100.0	0	86.1	63	126			D
Toluene	86	5.0	100.0	0	86.5	80	120			D
Ethylbenzene	91	5.0	100.0	0	91.5	80	120			D
Xylenes, Total	290	10	300.0	0	97.3	80	120			D
1,2,4-Trimethylbenzene	110	5.0	100.0	3.780	102	80	120			D
1,3,5-Trimethylbenzene	97	5.0	100.0	1.420	95.4	80	120			D
Surr: 4-Bromofluorobenzene	97		100.0		97.3	87.9	146			D

Sample ID	1610A99-007AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	GBR-8		Batch ID:	B38203		RunNo:	38203			
Prep Date:			Analysis Date:	10/25/2016		SeqNo:	1192328		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	84	12	100.0	0	84.4	63.4	127	2.90	20	D
Benzene	90	5.0	100.0	0	89.6	63	126	4.01	20	D
Toluene	89	5.0	100.0	0	89.4	80	120	3.29	20	D
Ethylbenzene	96	5.0	100.0	0	96.4	80	120	5.22	20	D
Xylenes, Total	310	10	300.0	0	102	80	120	4.92	20	D
1,2,4-Trimethylbenzene	110	5.0	100.0	3.780	107	80	120	5.20	20	D
1,3,5-Trimethylbenzene	100	5.0	100.0	1.420	101	80	120	5.42	20	D
Surr: 4-Bromofluorobenzene	100		100.0		103	87.9	146	0	0	D

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory
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 Southw

Work Order Number: 1610A99

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

10/21/2016 9:15:00 AM

Completed By: Lindsay Mangin

10/21/2016 2:17:38 PM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

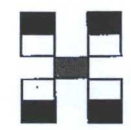
18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Chain-of-Custody Record

Client: Western Refining
Kelly Robinson
 Mailing Address: 111 Cr 4790
Bloomfield, NM
 Phone #: _____
 Email or Fax#: Chenemann@henv.com
 A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
 Accreditation:
☒ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush
 Project Name:
GBR Quarry
 Project #:
12614068
 Project Manager:
Devin Henemann
 Sampler: Alex Grook
 On Ice: ☒ Yes ☐ No
 Sample Temperature: _____



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	BTEX + MTBE + THMs (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride	Air Bubbles (Y or N)
10/20	1015	AQ	GBR-26	3 VOA 1 250ml	ACI COOL	1610A99 -001	X											X	
	1040		GBR-210			-002													
	1110		GBR-25			-003													
	1145		GBR-22			-004													
	1225		GBR-34			-005													
	1410		GBR-20			-006													
✓	1545	✓	GBR-8	✓	✓	-007	✓												

Date: <u>10/20/16</u>	Time: <u>1517</u>	Relinquished by: <u>Alex Grook</u>	Received by: <u>Christine Walter</u>	Date: <u>10/20/16</u>	Time: <u>1517</u>
Date: <u>10/20/2018</u>	Time: _____	Relinquished by: <u>Christ Walter</u>	Received by: <u>Kirshay Coneha</u>	Date: <u>10/21/16</u>	Time: <u>0915</u>

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.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 27, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Quarterly

OrderNo.: 1610B77

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/22/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1610B77

Date Reported: 10/27/2016

CLIENT: Western Refining Southwest, Inc.
Project: GBR Quarterly

Lab Order: 1610B77

Lab ID: 1610B77-001

Collection Date: 10/21/2016 10:10:00 AM

Client Sample ID: GBR-11

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	2.6	1.0		mg/L	1	10/26/2016 3:32:42 PM	28286
Surr: DNOP	115	77.1-144		%Rec	1	10/26/2016 3:32:42 PM	28286
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/25/2016 2:42:05 PM	G38203
Surr: BFB	83.8	66.4-120	D	%Rec	5	10/25/2016 2:42:05 PM	G38203

Lab ID: 1610B77-002

Collection Date: 10/21/2016 11:30:00 AM

Client Sample ID: SHS-8

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	2.2	1.0		mg/L	1	10/26/2016 3:54:23 PM	28286
Surr: DNOP	112	77.1-144		%Rec	1	10/26/2016 3:54:23 PM	28286
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/25/2016 3:06:18 PM	G38203
Surr: BFB	81.6	66.4-120	D	%Rec	5	10/25/2016 3:06:18 PM	G38203

Lab ID: 1610B77-003

Collection Date: 10/21/2016 12:30:00 PM

Client Sample ID: SHS-2

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	15	1.0		mg/L	1	10/26/2016 4:16:00 PM	28286
Surr: DNOP	114	77.1-144		%Rec	1	10/26/2016 4:16:00 PM	28286
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25	D	mg/L	5	10/25/2016 3:30:27 PM	G38203
Surr: BFB	87.7	66.4-120	D	%Rec	5	10/25/2016 3:30:27 PM	G38203

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610B77

27-Oct-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	LCS-28286		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 28286		RunNo: 38209					
Prep Date:	10/26/2016		Analysis Date: 10/26/2016		SeqNo: 1193527		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.8	1.0	5.000	0	135	63.2	155			
Surr: DNOP	0.62		0.5000		124	77.1	144			

Sample ID	MB-28286		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 28286		RunNo: 38209					
Prep Date:	10/26/2016		Analysis Date: 10/26/2016		SeqNo: 1193528		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	1.0		1.000		104	77.1	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610B77

27-Oct-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	G38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192307	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		82.5	66.4	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	G38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192308	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.6	80	120			
Surr: BFB	18		20.00		90.9	66.4	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



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 Southw

Work Order Number: 1610877

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

10/22/2016 8:20:00 AM

Completed By: Lindsay Mangin

10/25/2016 9:25:38 AM

Reviewed By: aJ

10/25/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

CEM Quarry

Project #:

12614068

Phone #:

email or Fax#: Dhenchmann@Henv.com

Project Manager:

Denn Henschmann

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Sampler:

HEXCREOUS

On Ice:

YES

☐ No

Sample Temperature:

34

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No

BTEX + MTBE + TMB's (8021)
BTEX + MTBE + TPH (Gas only)
TPH 8015B (GRO / DRO / MRO)
TPH (Method 418.1)
EDB (Method 504.1)
PAH's (8310 or 8270 SIMS)
RCRA 8 Metals
Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)
8081 Pesticides / 8082 PCB's
8260B (VOA)
8270 (Semi-VOA)

Air Bubbles (Y or N)

10/21 1010

HS

6842-11

1amber

COB1

-CO1

1130

HS

SHS-8

1amber

COB1

-CO2

1230

HS

SHS-2

1amber

COB1

-CO3

Date: Time:

Relinquished by:

Received by:

Date: Time:

Remarks:

10/21/10 1310

Relinquished by:

Received by:

Date: Time:

Remarks:

Date: Time:

Relinquished by:

Received by:

Date: Time:

Remarks:

10/21/10 2105

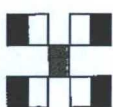
Relinquished by:

Received by:

Date: Time:

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



HALL ENVIRONMENTAL
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 27, 2016

Devin Hencmann

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: GBR Quarterly

OrderNo.: 1610B78

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/22/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1610B78

Date Reported: 10/27/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** GBR-11**Project:** GBR Quarterly**Collection Date:** 10/21/2016 10:10:00 AM**Lab ID:** 1610B78-001**Matrix:** AQUEOUS**Received Date:** 10/22/2016 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/25/2016 2:42:05 PM
Toluene	ND	5.0	D	µg/L	5	10/25/2016 2:42:05 PM
Ethylbenzene	ND	5.0	D	µg/L	5	10/25/2016 2:42:05 PM
Xylenes, Total	ND	10	D	µg/L	5	10/25/2016 2:42:05 PM
Surr: 4-Bromofluorobenzene	95.7	87.9-146	D	%Rec	5	10/25/2016 2:42:05 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	92	10		mg/L	20	10/25/2016 10:53:22 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1610B78

Date Reported: 10/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SHS-8

Project: GBR Quarterly

Collection Date: 10/21/2016 11:30:00 AM

Lab ID: 1610B78-002

Matrix: AQUEOUS

Received Date: 10/22/2016 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/25/2016 3:06:18 PM
Toluene	ND	5.0	D	µg/L	5	10/25/2016 3:06:18 PM
Ethylbenzene	ND	5.0	D	µg/L	5	10/25/2016 3:06:18 PM
Xylenes, Total	ND	10	D	µg/L	5	10/25/2016 3:06:18 PM
Surr: 4-Bromofluorobenzene	95.4	87.9-146	D	%Rec	5	10/25/2016 3:06:18 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	110	10		mg/L	20	10/25/2016 11:43:01 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1610B78

Date Reported: 10/27/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** SHS-2**Project:** GBR Quarterly**Collection Date:** 10/21/2016 12:30:00 PM**Lab ID:** 1610B78-003**Matrix:** AQUEOUS**Received Date:** 10/22/2016 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	5.0	D	µg/L	5	10/25/2016 3:30:27 PM
Toluene	ND	5.0	D	µg/L	5	10/25/2016 3:30:27 PM
Ethylbenzene	ND	5.0	D	µg/L	5	10/25/2016 3:30:27 PM
Xylenes, Total	ND	10	D	µg/L	5	10/25/2016 3:30:27 PM
Surr: 4-Bromofluorobenzene	100	87.9-146	D	%Rec	5	10/25/2016 3:30:27 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	280	10	*	mg/L	20	10/26/2016 12:07:50 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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610B78

27-Oct-16

Client: Western Refining Southwest, Inc.

Project: GBR Quarterly

Sample ID	MB	SampType: mbk			TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R38215			RunNo: 38215						
Prep Date:		Analysis Date: 10/25/2016			SeqNo: 1192825		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								

Sample ID	LCS	SampType: lcs			TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R38215			RunNo: 38215						
Prep Date:		Analysis Date: 10/25/2016			SeqNo: 1192826		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		5.0	0.50	5.000	0	100	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610B78
27-Oct-16

Client: Western Refining Southwest, Inc.
Project: GBR Quarterly

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	B38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192321	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.0	87.9	146			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	B38203	RunNo:	38203					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192322	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	16	2.5	20.00	0	80.3	80	120			
Benzene	18	1.0	20.00	0	88.3	80	120			
Toluene	18	1.0	20.00	0	88.8	80	120			
Ethylbenzene	18	1.0	20.00	0	90.5	80	120			
Xylenes, Total	59	2.0	60.00	0	98.4	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	101	80	120			
1,3,5-Trimethylbenzene	19	1.0	20.00	0	95.1	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		96.1	87.9	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
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Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1610B78

RcptNo: 1

Received by/date: *[Signature]* 10/25/16
Logged By: Lindsay Mangin 10/22/2016 8:20:00 AM
Completed By: Lindsay Mangin 10/25/2016 9:29:23 AM
Reviewed By: *AJ* 10/25/16

[Signature]

[Signature]

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

Client: Kelly Robinson
Western Refining
Mailing Address: 111 CR 4990
Pocahontas, NM
Phone #:
email or Fax#: Dhenemann@Iterulo
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type)

☒ Standard ☐ Rush

Project Name:

Project #:

Project Manager:

Sampler:

On Ice:

Sample T

Container Type and #	Material	Volume	Weight	Notes
1
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100

Preservative
Type

HEAL No

1100378

- 00

- 002

- 00 -

~~BTEX + MTBE + TMB'S (8021)~~

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIN

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, P)

8081 Pesticides / 8082 F

8260B (VOA)

8270 (Semi-VOA)

Anionide

Journal of Management Education 36(7) 809-824

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•

Air Bubbles (Y or N)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

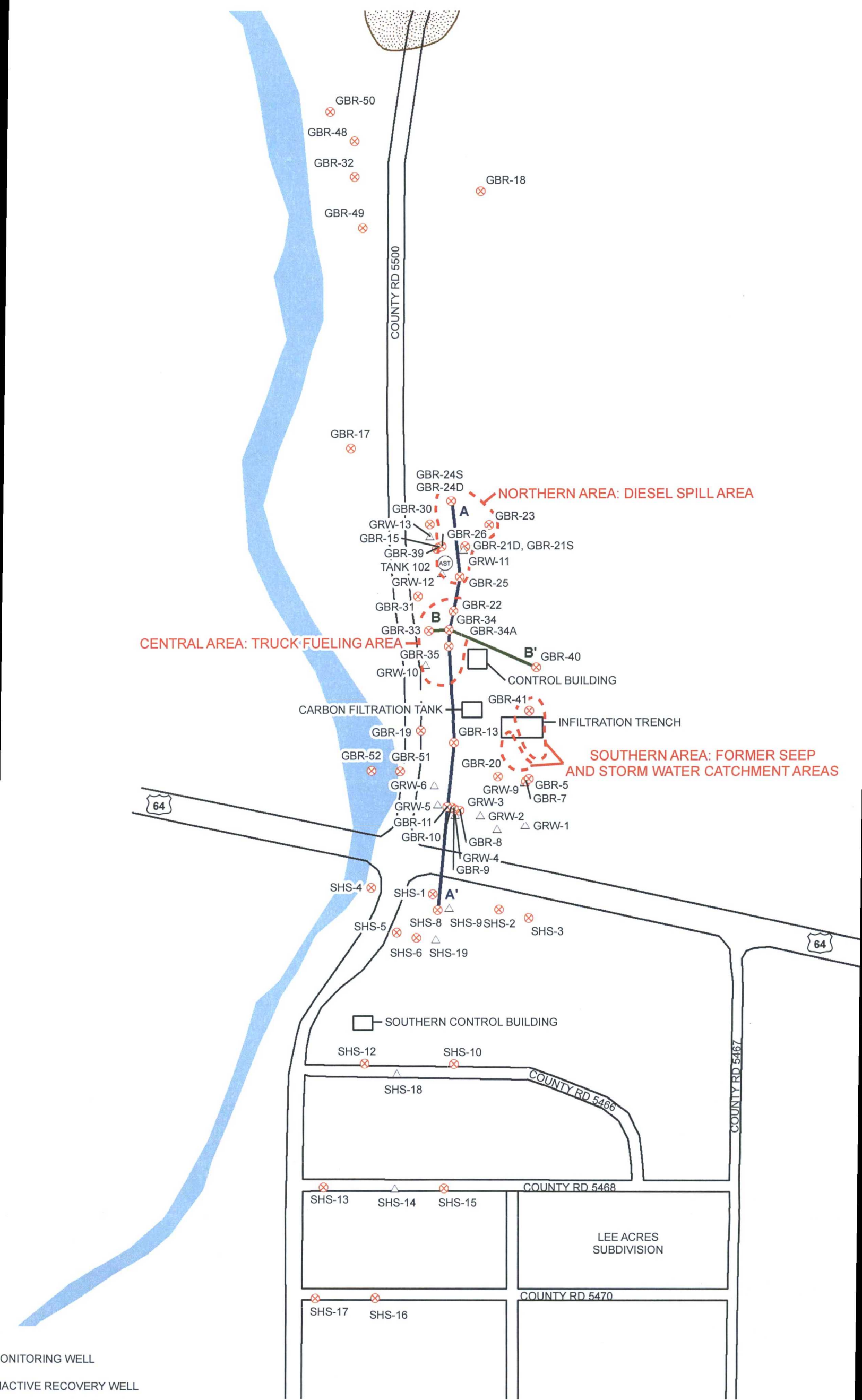
Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTHF	BTEX + MTHF	TPH 8015B	TPH (Metho)	EDB (Metho)	PAH's (8310)	RCRA 8 Met	Anions (F, Cl)	8081 Pesticides	8260B (VOA)	8270 (Semi-VOCs)	Chloride	Air Rubbles
10/21	1100	AQ	GBR-11	1250ml 362A	COOL H21	1610B-18	-001	X										X	
↓	1130	↓	SHS-8	↓	↓		-002	↓										↓	
↓	1230	↓	SHS-2	↓	↓		-003	↓										↓	
A diagonal line is drawn across the remaining rows of the table.																			

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/21/16	1310	<i>[Signature]</i>	<i>[Signature]</i>	10/21/16	B10
Date:	Time:	Relinquished by:	Received by:	Date	Time
01/21/16	2100	<i>[Signature]</i>	<i>[Signature]</i>	10/22/16	0820

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.



MONITORING WELL
ACTIVE RECOVERY WELL
BOVEGROUND STORAGE TANK (AST)
ROSS SECTION A-A'
ROSS SECTION B-B'
RROYO
ORMER LEE ACRES LANDFILL
OURCE AREA

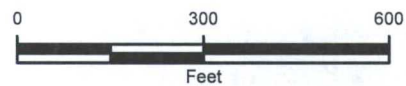
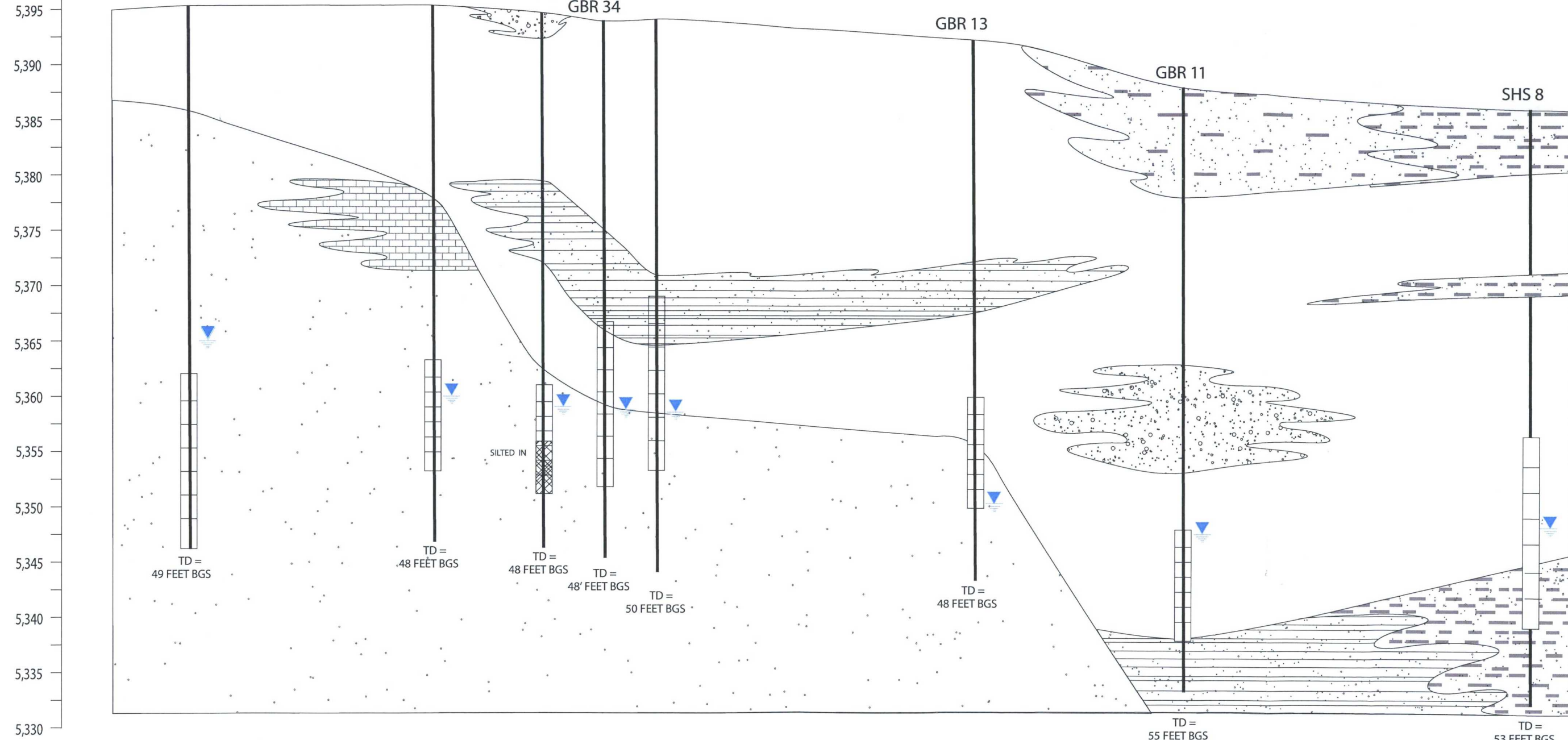


FIGURE 2
SITE MAP
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

ELEVATION IN FEET



LEGEND

- SANDY SILT
- CLAYEY SAND
- SILTY SAND
- SAND
- SCREENED INTERVAL

- BOREHOLE
- SCREENED INTERVAL
- BGS BELOW GROUND SURFACE
- TD TOTAL DEPTH IN FEET

HORIZONTAL SCALE
1" = 10 FEET

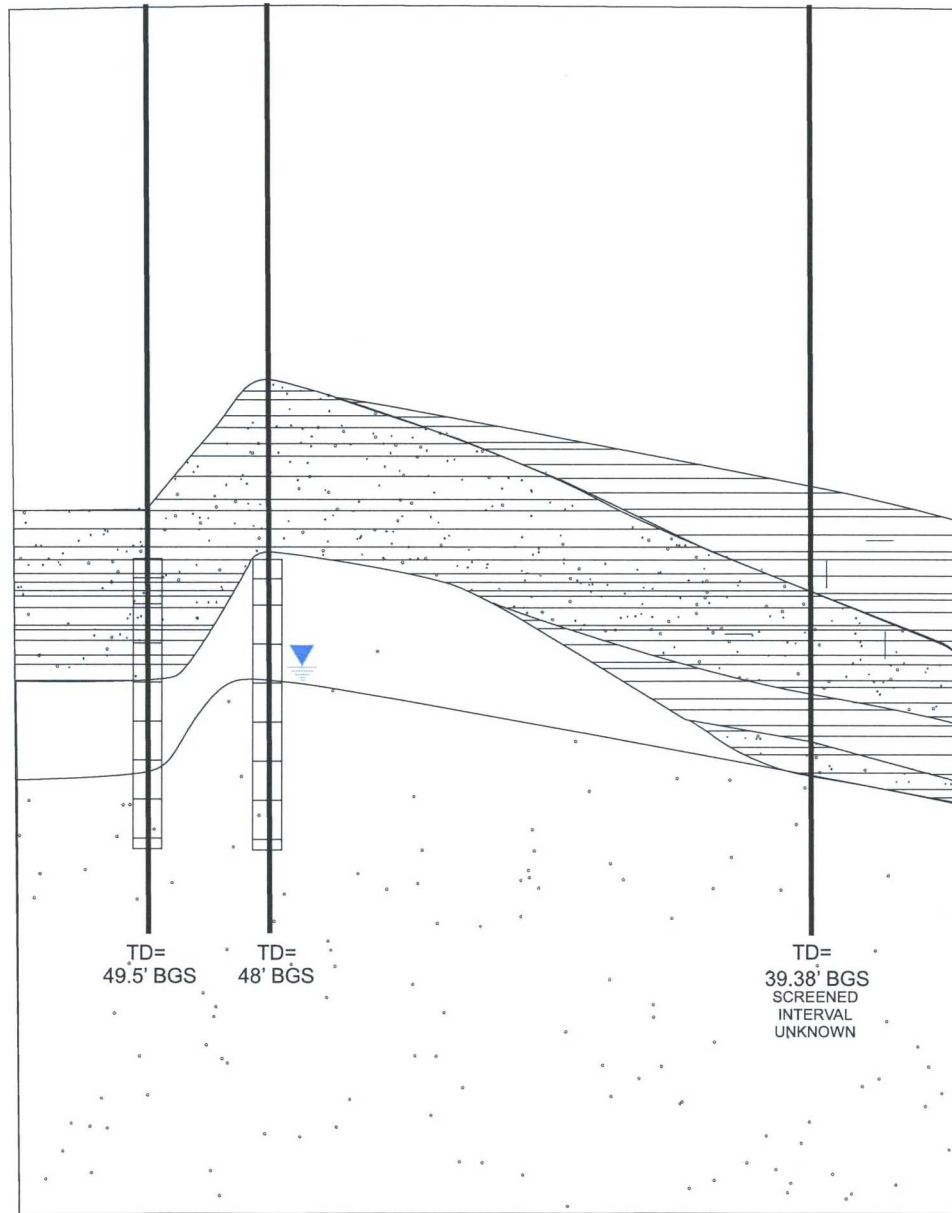
VERTICAL SCALE
1" = 90 FEET

ELEVATION IN FEET

5,395
5,390
5,385
5,380
5,375
5,370
5,365
5,360
5,355
5,350
5,345
5,340
5,335
5,330

GBR 33 GBR 34

GBR 40



LEGEND

- CLAYEY SAND
- CLAY
- SAND
- NACIMIENTO SANDSTONE
- DRY

- BOREHOLE
- SCREENED INTERVAL
- BGS BELOW GROUND SURFACE
- TD TOTAL DEPTH IN FEET

HORIZONTAL SCALE
1" = 10 FEET

VERTICAL SCALE
1" = 90 FEET

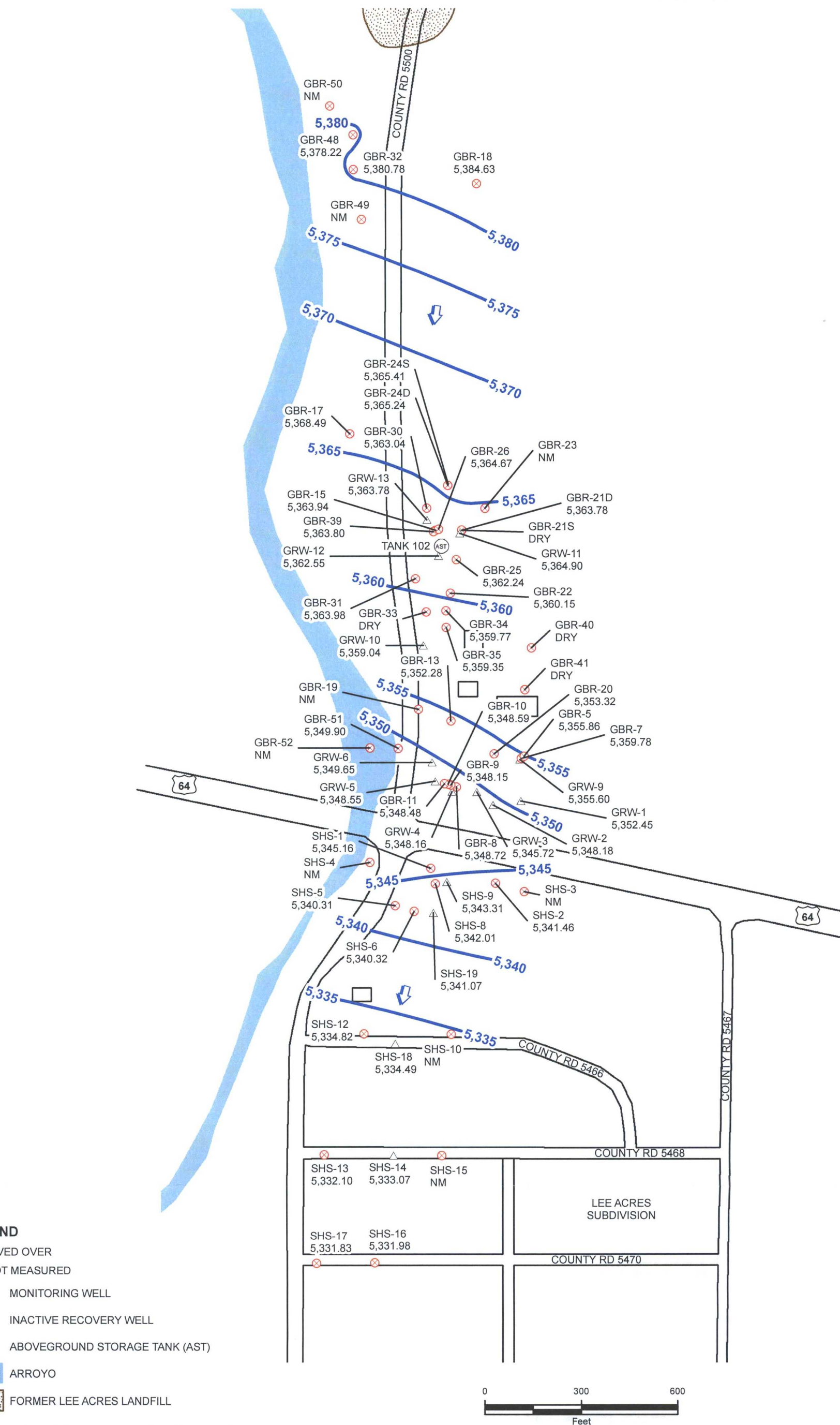
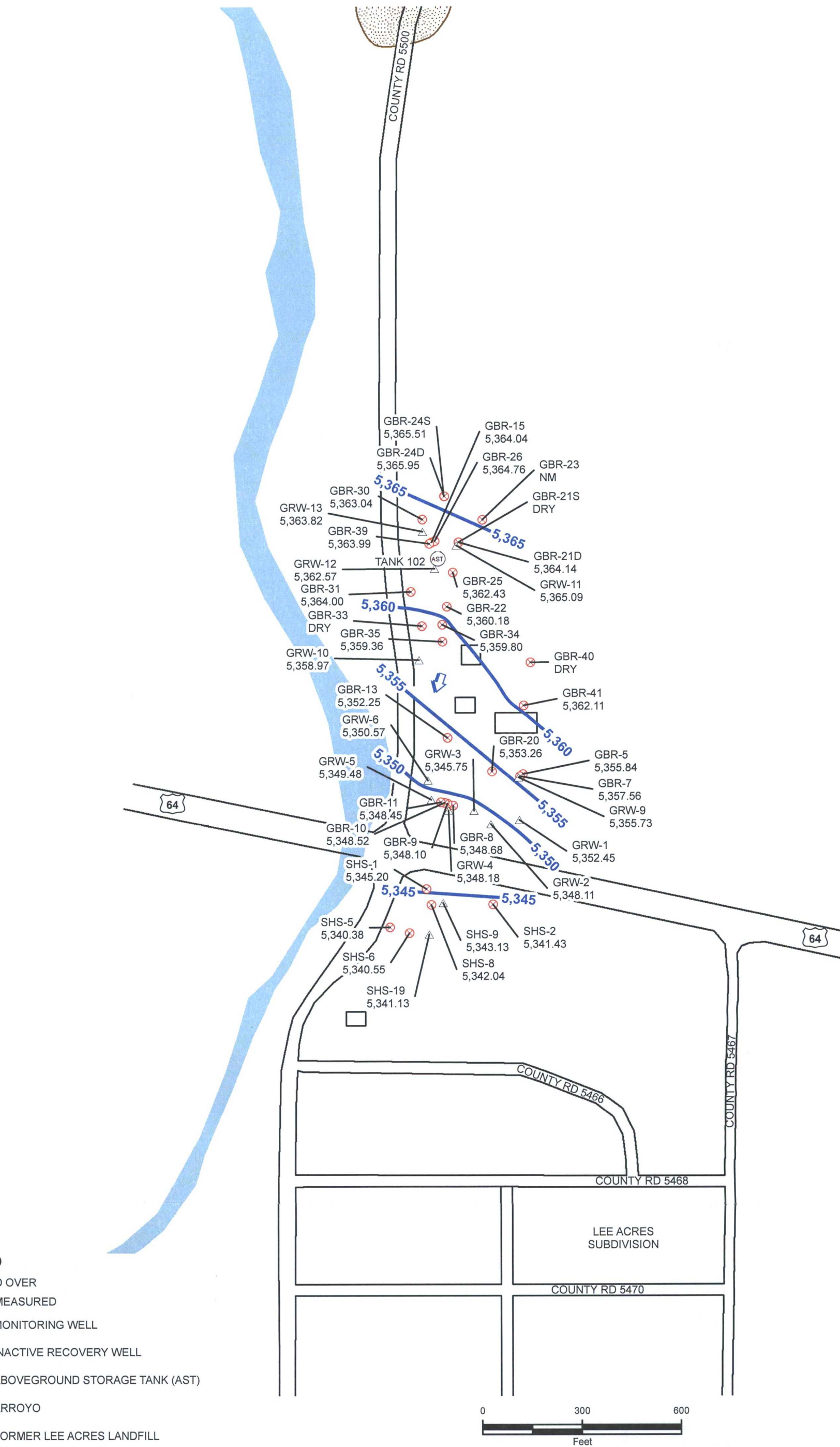


FIGURE 6
GROUNDWATER POTENTIOMETRIC SURFACE MAP (JANUARY 2016)
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.



OVER
MEASURED
MONITORING WELL
INACTIVE RECOVERY WELL
ABOVEGROUND STORAGE TANK (AST)
CANYON
FORMER LEE ACRES LANDFILL
ESTIMATED GROUNDWATER FLOW DIRECTION
GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 5 FEET
GROUNDWATER ELEVATION MEASURED IN FEET
ABOVE MEAN SEA LEVEL

FIGURE 10
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
GROUNDWATER POTENTIOMETRIC SURFACE MAP (2/23/2016)
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

MEASURED
OVER
MONITORING WELL
IACTIVE RECOVERY WELL
BOVEGROUND STORAGE TANK (AST)
RROYO
ORMER LEE ACRES LANDFILL
STIMATED GROUNDWATER FLOW DIRECTION
GROUNDWATER ELEVATION CONTOUR
ONTOUR INTERVAL = 5 FEET
GROUNDWATER ELEVATION MEASURED IN FEET
OVE MEAN SEA LEVEL

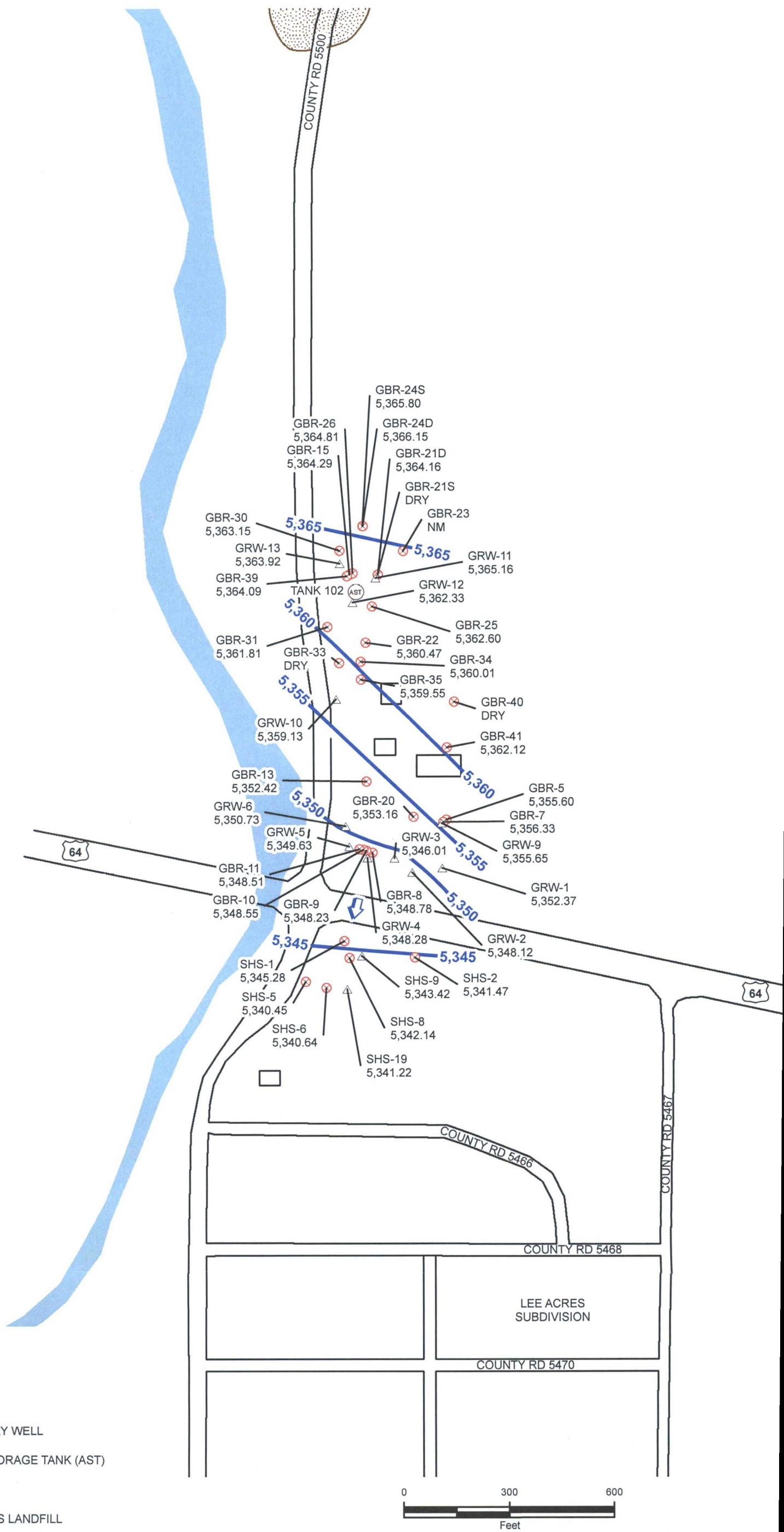


FIGURE 11
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
GROUNDWATER POTENTIOMETRIC SURFACE MAP (3/22/2016)
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

MEASURED
 OVER
 MONITORING WELL
 ACTIVE RECOVERY WELL
 ABOVEGROUND STORAGE TANK (AST)
 ROYO
 FORMER LEE ACRES LANDFILL
 ESTIMATED GROUNDWATER FLOW DIRECTION
 GROUNDWATER ELEVATION CONTOUR
 CONTOUR INTERVAL = 5 FEET
 GROUNDWATER ELEVATION MEASURED IN FEET
 ABOVE MEAN SEA LEVEL

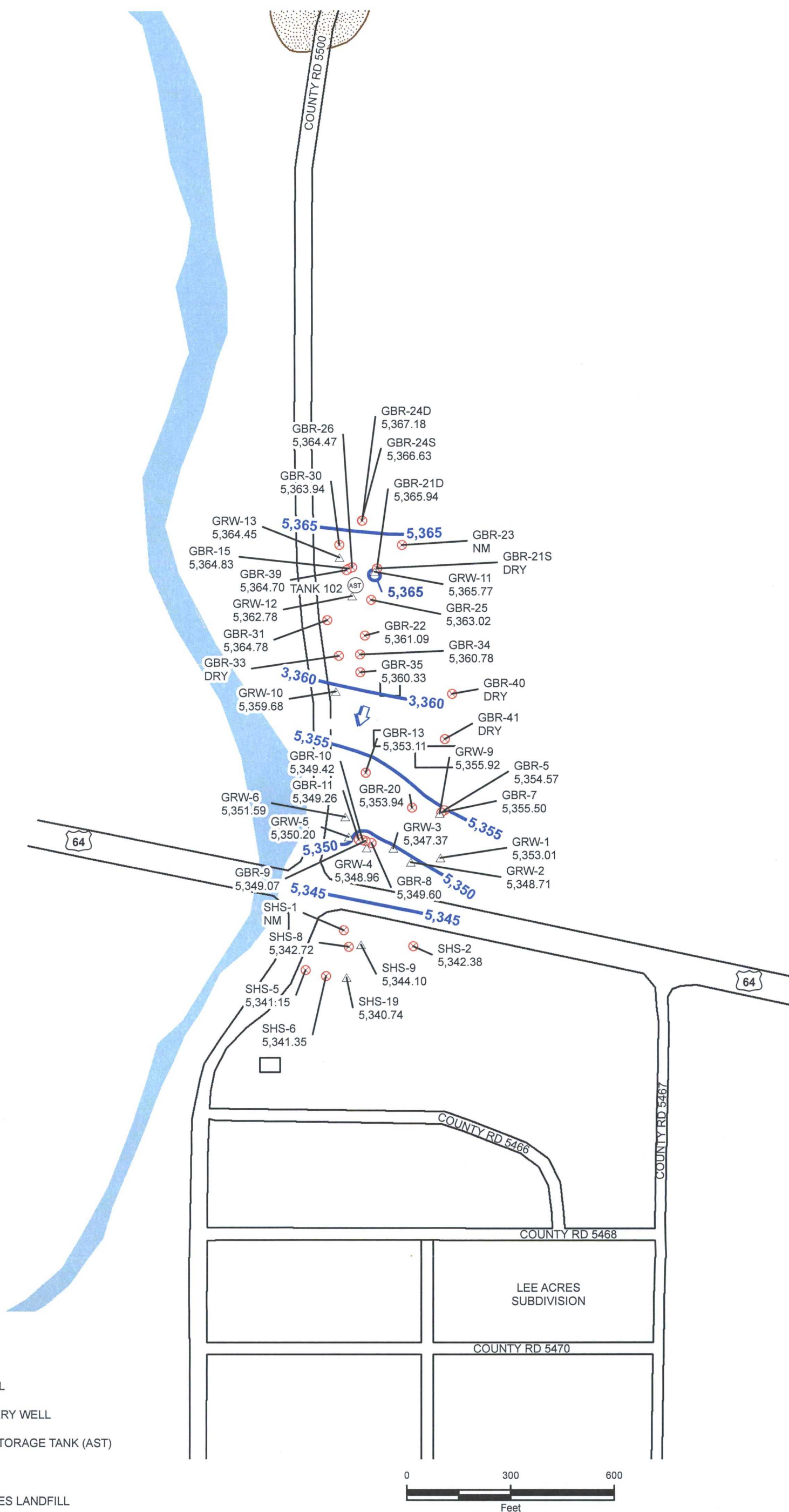


FIGURE 14
 VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
 GROUNDWATER POTENTIOMETRIC SURFACE MAP (6/27/2016)
 FORMER GIANT BLOOMFIELD REFINERY
 SW SEC 22 & NW SEC 27 T29N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

MEASURED
OVER
MONITORING WELL
ACTIVE RECOVERY WELL
BOVEGROUND STORAGE TANK (AST)
RROYO
ORMER LEE ACRES LANDFILL
STIMATED GROUNDWATER FLOW DIRECTION
GROUNDWATER ELEVATION CONTOUR
ONTOUR INTERVAL = 5 FEET
GROUNDWATER ELEVATION MEASURED IN FEET
BOVE MEAN SEA LEVEL

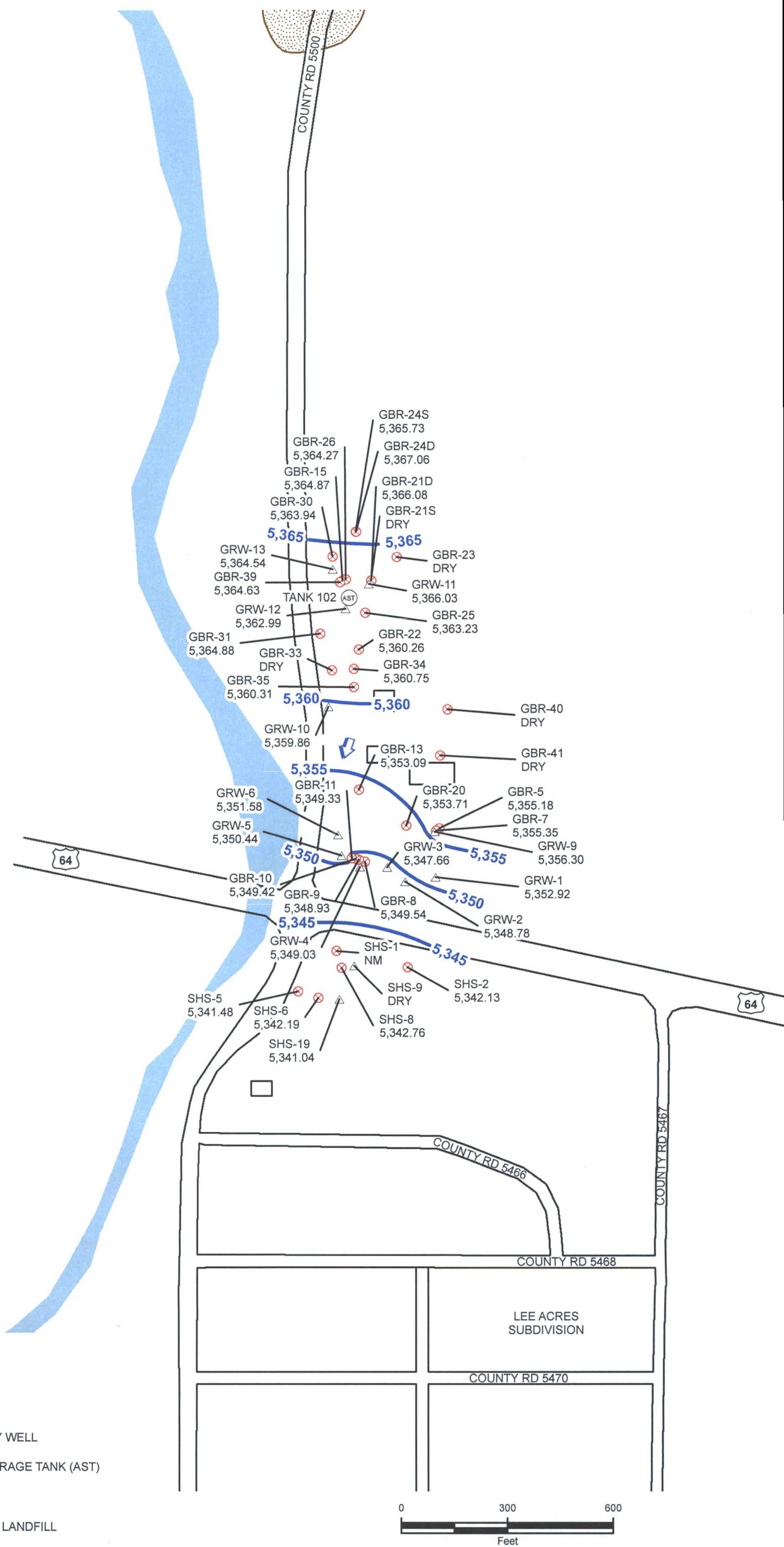


FIGURE 15
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
GROUNDWATER POTENTIOMETRIC SURFACE MAP (7/25/2016)
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

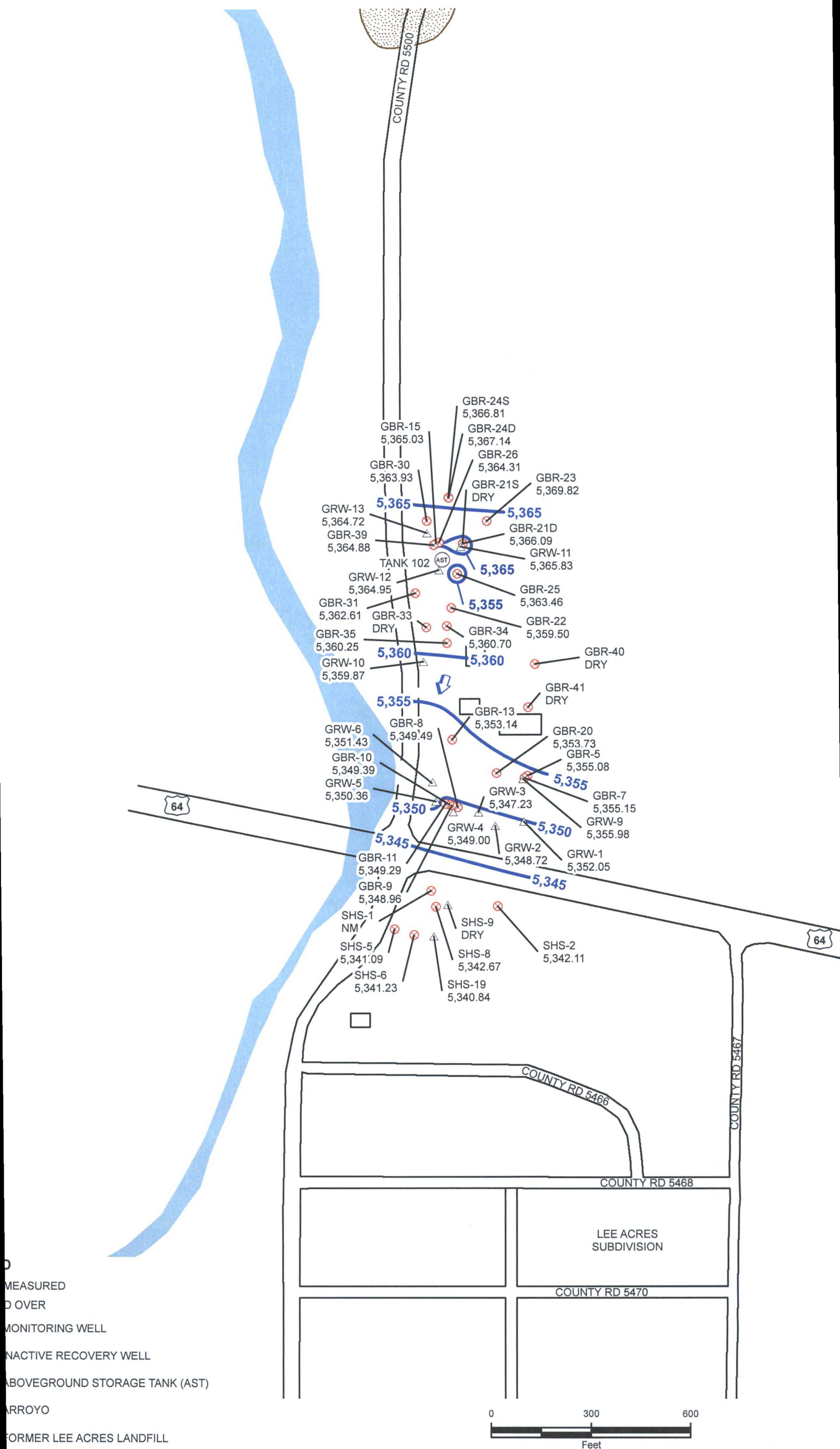


FIGURE 16
VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
GROUNDWATER POTENTIOMETRIC SURFACE MAP (8/25/2016)
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

SURED
 ER
 TORING WELL
 TIVE RECOVERY WELL
 EGROUND STORAGE TANK (AST)
 OYO
 MER LEE ACRES LANDFILL
 MATED GROUNDWATER FLOW DIRECTION
 NDWATER ELEVATION CONTOUR
 OUR INTERVAL = 5 FEET
 NDWATER ELEVATION MEASURED IN FEET
 E MEAN SEA LEVEL

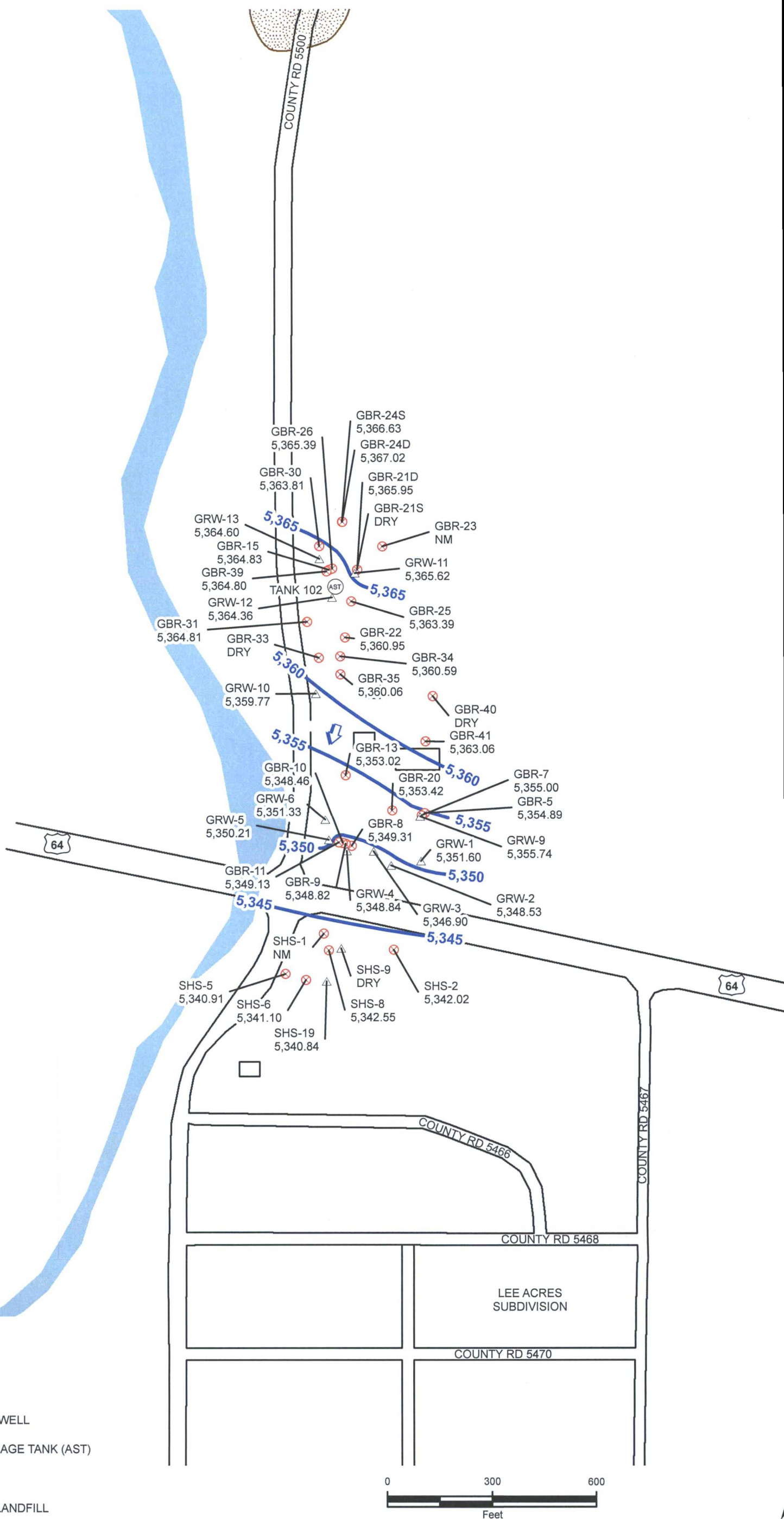


FIGURE 17
 VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
 GROUNDWATER POTENTIOMETRIC SURFACE MAP (9/26/2016)
 FORMER GIANT BLOOMFIELD REFINERY
 SW SEC 22 & NW SEC 27 T29N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

MEASURED
 WATER
 MONITORING WELL
 RECOVERY WELL
 GROUND STORAGE TANK (AST)
 DRY
 FORMER LEE ACRES LANDFILL
 ESTIMATED GROUNDWATER FLOW DIRECTION
 GROUNDWATER ELEVATION CONTOUR
 CONTOUR INTERVAL = 5 FEET
 GROUNDWATER ELEVATION MEASURED IN FEET
 MEAN SEA LEVEL

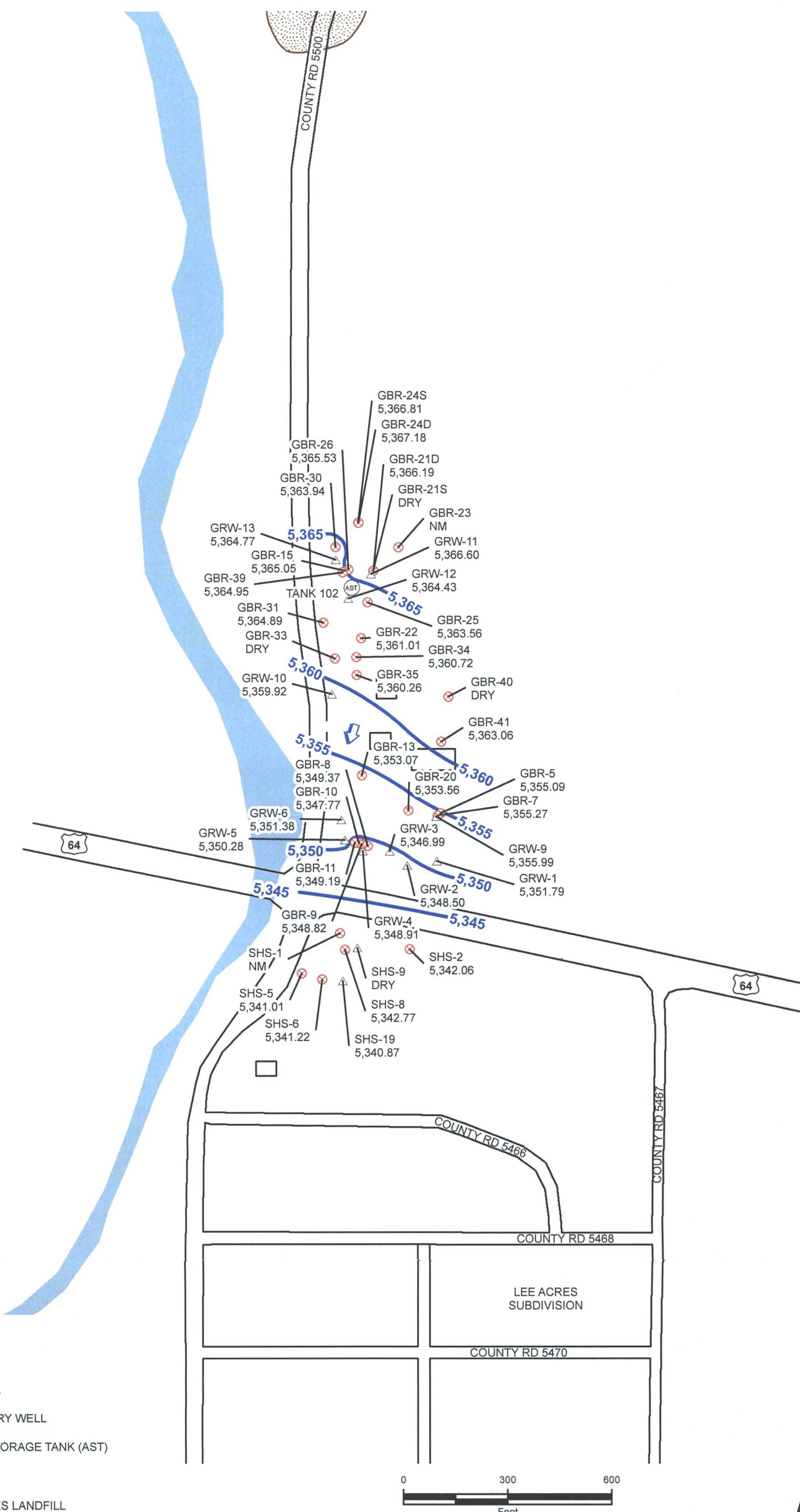


FIGURE 18
 VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
 GROUNDWATER POTENTIOMETRIC SURFACE MAP (10/17/2016)
 FORMER GIANT BLOOMFIELD REFINERY
 SW SEC 22 & NW SEC 27 T29N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

MEASURED
 OVER
 MONITORING WELL
 ACTIVE RECOVERY WELL
 ABOVEGROUND STORAGE TANK (AST)
 ROYO
 FORMER LEE ACRES LANDFILL
 ESTIMATED GROUNDWATER FLOW DIRECTION
 GROUNDWATER ELEVATION CONTOUR
 CONTOUR INTERVAL = 5 FEET
 GROUNDWATER ELEVATION MEASURED IN FEET
 ABOVE MEAN SEA LEVEL

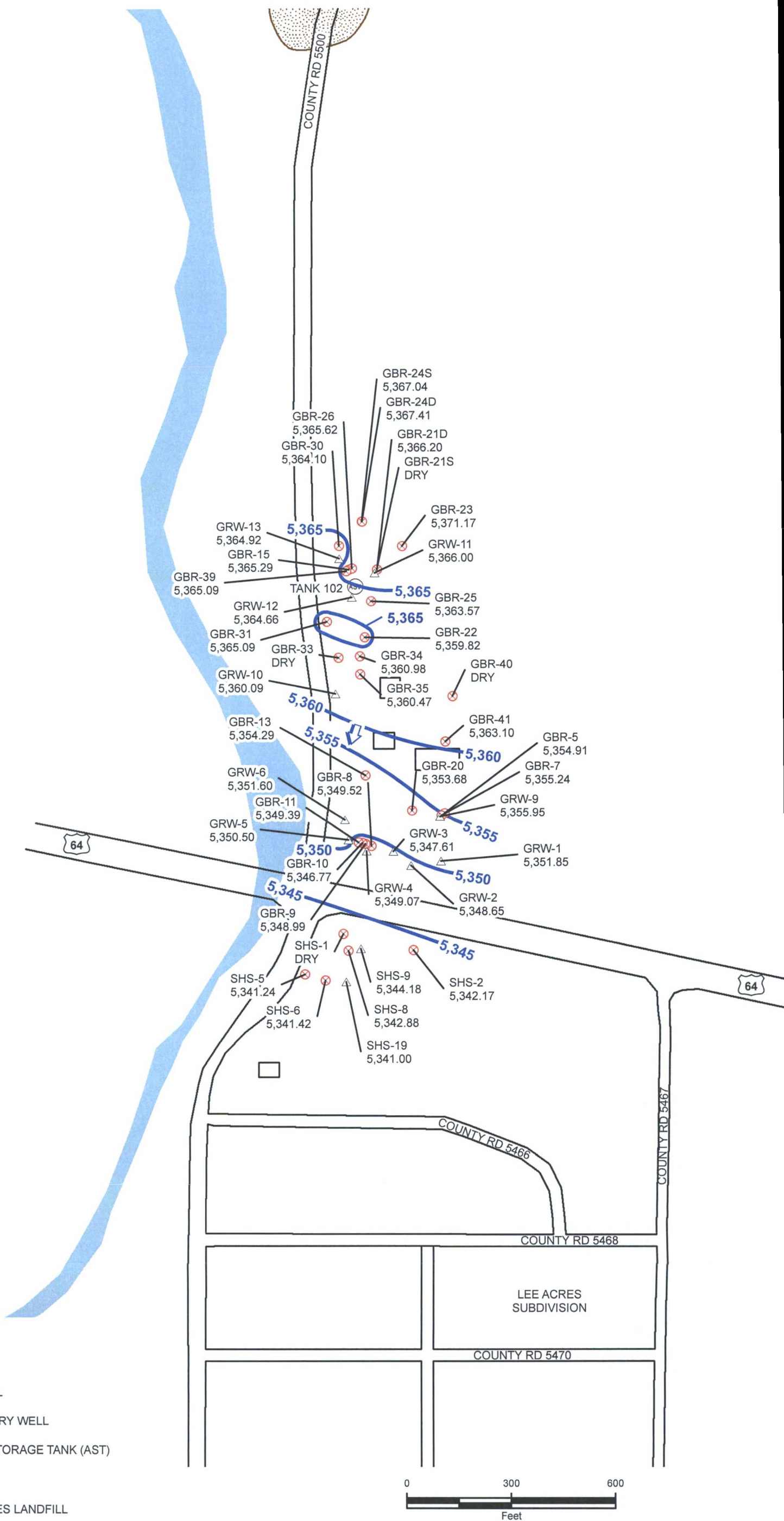


FIGURE 20
 VOLUNTARY MONITORING OF STATIC GROUNDWATER CONDITIONS
 GROUNDWATER POTENTIOMETRIC SURFACE MAP (12/30/2016)
 FORMER GIANT BLOOMFIELD REFINERY
 SW SEC 22 & NW SEC 27 T29N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.

TABLE 1
GROUNDWATER ELEVATIONS AND THICKNESS OF PHASE-SEPARATED HYDROCARBONSFORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Well Number	Wellhead Elevation (feet)	Total Depth (feet)	January 2016				April 2016				July 2016				October 2016			
			Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)
GRW-1	5,394.30	73.35	41.85	-	-	5,352.45	42.10	-	-	5,352.20	42.38	-	-	5,351.92	43.51	-	-	5,350.79
GRW-2	5,391.28	61.00	43.10	-	-	5,348.18	43.20	-	-	5,348.08	43.50	-	-	5,347.78	43.76	-	-	5,347.52
GRW-3	5,388.77	58.30	43.05	-	-	5,345.72	42.87	-	-	5,345.90	43.11	-	-	5,345.66	43.75	-	-	5,345.02
GRW-4	5,390.02	60.00	41.86	-	-	5,348.16	41.78	-	-	5,348.24	41.99	-	-	5,348.03	42.11	-	-	5,347.91
GRW-5	5,390.56	68.30	42.01	-	-	5,348.55	41.98	-	-	5,348.58	42.12	-	-	5,348.44	42.28	-	-	5,348.28
GRW-6	5,390.81	53.80	41.16	-	-	5,349.65	41.12	-	-	5,349.69	41.23	-	-	5,349.58	41.42	-	-	5,349.39
GRW-9	5,395.70	54.40	40.10	-	-	5,355.60	40.22	-	-	5,355.48	40.40	-	-	5,355.30	40.71	-	-	5,354.99
GRW-10	5,395.02	66.02	35.98	-	-	5,359.04	35.93	-	-	5,359.09	36.16	-	-	5,358.86	36.09	-	-	5,358.93
GRW-11	5,397.85	64.00	32.95	-	-	5,364.90	32.73	-	-	5,365.12	32.82	-	-	5,365.03	32.95	-	-	5,364.90
GRW-12	5,397.24	48.00	34.69	-	-	5,362.55	34.59	-	-	5,362.65	35.25	-	-	5,361.99	34.79	-	-	5,362.45
GRW-13	5,396.90	61.30	33.12	-	-	5,363.78	33.05	-	-	5,363.85	33.36	-	-	5,363.54	33.13	-	-	5,363.77
GBR-5	5,395.07	47.08	39.21	-	-	5,355.86	39.46	-	-	5,355.61	39.89	-	-	5,355.18	39.96	-	-	5,355.11
GBR-7	5,395.85	51.65	36.07	-	-	5,359.78	40.20	39.83	0.37	5,355.98	41.50	41.08	0.42	5,354.72	41.58	41.39	0.19	5,395.83
GBR-8	5,390.50	50.90	41.78	-	-	5,348.72	41.80	-	-	5,348.70	41.96	-	-	5,348.54	42.12	-	-	5,348.38
GBR-9	5,389.92	67.22	41.77	-	-	5,348.15	41.75	-	-	5,348.17	41.99	-	-	5,347.93	42.08	-	-	5,347.84
GBR-10	5,390.57	47.56	41.98	-	-	5,348.59	42.05	-	-	5,348.52	42.15	-	-	5,348.42	43.80	-	-	5,346.77
GBR-11	5,389.43	51.87	40.95	-	-	5,348.48	41.90	-	-	5,347.53	41.10	-	-	5,348.33	41.24	-	-	5,348.19
GBR-13	5,393.04	45.47	40.76	-	-	5,352.28	40.69	-	-	5,352.35	40.95	-	-	5,352.09	40.94	-	-	5,352.10
GBR-15	5,397.99	58.42	34.05	-	-	5,363.94	33.85	-	-	5,364.14	34.12	-	-	5,363.87	33.94	-	-	5,364.05
GBR-17	5,402.69	43.20	34.20	-	-	5,368.49	34.20	-	-	5,368.49	34.37	-	-	5,368.32	34.45	-	-	5,368.24
GBR-18	5,421.68	47.85	37.05	-	-	5,384.63	36.89	-	-	5,384.79	37.00	-	-	5,384.68	37.16	-	-	5,384.52
GBR-19	5,393.83	46.23	***	-	-	-	***	-	-	-	***	-	-	-	***	-	-	-
GBR-20	5,393.47	54.57	40.15	-	-	5,353.32	40.37	-	-	5,353.10	40.76	-	-	5,352.71	40.91	-	-	5,352.56
GBR-21D	5,400.19	49.77	36.41	-	-	5,363.78	36.05	-	-	5,364.14	36.11	-	-	5,364.08	36.00	-	-	5,364.19
GBR-21S	5,400.65	49.77	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-
GBR-22	5,395.91	38.73	35.76	-	-	5,360.15	34.62	-	-	5,361.29	36.65	-	-	5,359.26	35.88	-	-	5,360.03
GBR-23	5,403.72	39.45	****	-	-	-	****	-	-	-	****	-	-	-	35.28	35.27	0.01	5,368.45
GBR-24D	5,396.77	51.40	31.53	-	-	5,365.24	31.33	-	-	5,365.44	31.40	-	-	5,365.37	31.29	-	-	5,365.48
GBR-24S	5,396.08	37.05	30.67	-	-	5,365.41	30.23	-	-	5,365.85	31.35	-	-	5,364.73	30.27	-	-	5,365.81
GBR-25	5,397.03	37.12	34.79	-	-	5,362.24	34.46	-	-	5,362.57	34.80	-	-	5,362.23	34.47	-	-	5,362.56
GBR-26	5,396.72	41.29	32.05	-	-	5,364.67	32.48	-	-	5,364.24	33.45	-	-	5,363.27	32.18	-	-	5,364.54
GBR-30	5,395.59	41.66	32.55	-	-	5,363.04	32.50	-	-	5,363.09	32.65	-	-	5,362.94	32.64	-	-	5,362.95
GBR-31	5,396.58	43.50	32.60	-	-	5,363.98	32.63	-	-	5,363.95	32.70	-	-	5,363.88	32.67	-	-	5,363.91
GBR-32	5,414.86	47.83	34.08	-	-	5,380.78	33.95	-	-	5,380.91	34.16	-	-	5,380.70	34.08	-	-	5,380.78
GBR-33	5,396.28	45.72	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-
GBR-34	5,394.00	42.20	34.23	-	-	5,359.77	34.10	-	-	5,359.90	34.25	-	-	5,359.75	34.28	-	-	5,359.72
GBR-35	5,393.66	42.35	34.31	-	-	5,359.35	34.20	-	-	5,359.46	34.35	-	-	5,359.31	34.40	-	-	5,359.26
GBR-39	5,397.55	41.42	33.75	-	-	5,363.80	33.51	-	-	5,364.04	33.92	-	-	5,363.63	33.58	-	-	5,363.97
GBR-40	5,400.76	39.38	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-
GBR-41	5,396.35	34.28	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-	Dry	-	-	-
GBR-48	5,413.90	43.54	35.68	-	-	5,378.22	35.53	-	-	5,378.37	35.73	-	-	5,378.17	35.71	-	-	5,378.19
GBR-49	*	40.30	32.26	-	-	-	32.18	-	-	-	32.25	-	-	-	34.76	-	-	-
GBR-50	*	44.37	31.30	-	-	-	31.18	-	-	-	31.23	-	-	-	31.31	-	-	-
GBR-51	5,389.68	57.07	39.78	-	-	5,349.90	39.75	-	-	5,349.93	39.82	-	-	5,349.86	39.94	-	-	5,349.74
GBR-52	5,387.74	52.73	SCW	-	-	-	SCW	-	-	-	39.78	-	-	5,347.96	37.63	-	-	5,350.11

TABLE 1
GROUNDWATER ELEVATIONS AND THICKNESS OF PHASE-SEPARATED HYDROCARBONS

FORMER GIANT BLOOMFIELD REFINERY
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

Well Number	Wellhead Elevation (feet)	Total Depth (feet)	January 2016				April 2016				July 2016				October 2016			
			Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet)	PSH Thickness (feet)	Adjusted GWEL (feet)
SHS-1	5,383.54	50.40	38.38	-	-	5,345.16	38.24	-	-	5,345.30	*****	-	-	-	*****	-	-	-
SHS-2	5,381.66	44.56	40.20	-	-	5,341.46	40.24	-	-	5,341.42	40.53	-	-	5,341.13	40.60	-	-	5,341.06
SHS-3	5,383.33	-	**	-	-	-	**	-	-	-	**	-	-	-	**	-	-	-
SHS-4	5,383.62	52.16	ICW	-	-	-	40.70	-	-	5,342.92	41.56	-	-	5,342.06	41.04	-	-	5,342.58
SHS-5	5,378.36	47.85	38.05	-	-	5,340.31	37.95	-	-	5,340.41	37.88	-	-	5,340.48	38.33	-	-	5,340.03
SHS-6	5,378.17	52.78	37.85	-	-	5,340.32	37.70	-	-	5,340.47	37.17	-	-	5,341.00	38.14	-	-	5,340.03
SHS-8	5,380.25	50.92	38.24	-	-	5,342.01	38.16	-	-	5,342.09	38.49	-	-	5,341.76	38.50	-	-	5,341.75
SHS-9	5,380.79	46.25	37.48	-	-	5,343.31	37.42	-	-	5,343.37	OBS	-	-	-	OBS	-	-	-
SHS-10	5,373.80	45.80	OBS	-	-	-	OBS	-	-	-	OBS	-	-	-	OBS	-	-	-
SHS-12	5,373.94	52.41	39.12	-	-	5,334.82	38.87	-	-	5,335.07	38.72	-	-	5,335.22	Dry	-	-	-
SHS-13	5,367.81	47.51	35.71	-	-	5,332.10	35.44	-	-	5,332.37	35.24	-	-	5,332.57	36.12	-	-	5,331.69
SHS-14	5,367.07	52.71	34.00	-	-	5,333.07	33.68	-	-	5,333.39	33.53	-	-	5,333.54	34.52	-	-	5,332.55
SHS-15	5,366.21	47.78	*****	-	-	-	*****	-	-	-	*****	-	-	-	*****	-	-	-
SHS-16	5,362.58	42.20	30.60	-	-	5,331.98	30.35	-	-	5,332.23	30.42	-	-	5,332.16	31.10	-	-	5,331.48
SHS-17	5,364.35	46.21	32.52	-	-	5,331.83	32.25	-	-	5,332.10	32.17	-	-	5,332.18	32.97	-	-	5,331.38
SHS-18	5,373.64	47.36	39.15	-	-	5,334.49	38.90	-	-	5,334.74	38.82	-	-	5,334.82	39.61	-	-	5,334.03
SHS-19	5,378.89	52.40	37.82	-	-	5,341.07	37.70	-	-	5,341.19	37.85	-	-	5,341.04	38.12	-	-	5,340.77

Notes:

BTOC - below top of casing

D - designates the well screen is deep

DES - destroyed

GWEL - groundwater elevation

PSH - phase-separated hydrocarbon

S - designates the well screen is shallow

ICW - indicates the well was covered in ice and inaccessible at time of measurement

SCW - indicates the well was covered with sand and inaccessible at time of measurement

OBS - indicates an obstruction in the well, inaccessible at time of measurement

* Top-of-casing elevation is unknown

** Well is damaged by a tree root

*** Well was paved over in June 2010

**** Well hit by a vehicle May 2014

***** Well visibly broken/buried January 2016

***** Well buried and unable to locate May 2016

- indicates no GWEL or PSH measured

When PSH is detected, the GWEL is corrected using an estimated density correction factor of 0.88.