### GW - 40

## Annual Report





March 13, 2014

Glen Von Gonten
Environmental Engineer
New Mexico Energy, Minerals & Natural Resources Dept.
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

OIL CONS. DIV DIST. 3

MAR 2 0 2014

FedEx Tracking #: 7982 1281 7152

RE: 2013 Annual Report - former Giant Bloomfield Refinery

**OCD Discharge Permit GW-040** 

Dear Mr. Von Gonten;

Please find enclosed the 2013 Annual Report for the former Giant Bloomfield Refinery located in the NW ¼ of Section 27 and the SW ¼ of Section 22, Township 29 N, Range 12 W in San Juan County, New Mexico.

If you should have any questions or require additional information, please do not hesitate to contact Randy Schmaltz at 505-632-4171 or at <a href="mailto:Randy.Schmaltz@wnr.com">Randy.Schmaltz@wnr.com</a>.

Sincerely,

Kelly Robinson

**Environmental Supervisor** 

Western Refining

cc: Brandon Powell, NM OCD Aztec District Office

Allen Haines, Western Refining, El Paso

WNR File

### **2013 ANNUAL REPORT**

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

OIL CONS. DIV DIST. 3

**MARCH 2014** 



WESTERN REFINING SOUTHWEST, INC. Bloomfield, New Mexico

### **2013 ANNUAL REPORT**

### FORMER GIANT BLOOMFIELD REFINERY BLOOMFIELD, NEW MEXICO

### **DISCHARGE PERMIT GW-040**

### **MARCH 2014**

### Prepared for:

WESTERN REFINING SOUTHWEST, INC. 111 County Road 4990 Bloomfield, New Mexico 87413

### Prepared by:

LT ENVIRONMENTAL, INC. 2243 Main Avenue, Suite 3 Durango, Colorado 81301 (970) 385-1096



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### **EXECUTIVE SUMMARY**

LT Environmental, Inc. (LTE) on behalf of Western Refining Southwest, Inc. (Western) has prepared this report detailing work completed from January 2013 through December 2013 at the former Giant Bloomfield Refinery (Site) in Bloomfield, New Mexico. The scope of work for this project was continued recovery and monitoring of petroleum hydrocarbon impacts to groundwater, which were identified upon cessation of refinery operations. During the time period covered in this report, Western utilized a groundwater recovery and remediation system consisting of groundwater recovery wells, a carbon filtration unit, and a treated water infiltration trench.

LTE conducted operations and maintenance on the remediation system and monitored groundwater quality during 2013. The total volume of groundwater recovered and treated decreased from the volume observed in 2012 by 538,714 gallons to a total of 1,180,284 gallons.

LTE measured depth-to-groundwater in all monitoring wells and recovery wells quarterly and recovered phase-separated hydrocarbons (PSH) in monitoring wells with oil absorbent socks when PSH was detected weekly. Thin accumulations of PSH exist in previously identified source areas. A total of 14.99 gallons of PSH were recovered from the Site in 2013; a decrease from the 17.32 gallons recovered in 2012. The decreased volume of PSH recovered in 2013 can be attributed to a reduction in accumulation of PSH at the recovery well locations. Western increased the frequency of PSH recovery activities from quarterly to weekly beginning in August 2011. After two years of aggressive recovery, PSH accumulation in monitoring wells has decreased. However, PSH was detected in monitoring well SHS-9 for the first time since 1997 following a large precipitation event.

LTE sampled the remediation system influent and effluent quarterly for laboratory analysis of volatile organic compounds (VOCs) and general water chemistry. In addition, the system effluent was analyzed for polynuclear aromatic hydrocarbons (PAHs) and metals on an annual basis. Annual sampling in January 2013 included collecting groundwater samples from eleven monitoring wells and two recovery wells for laboratory analysis of VOCs and general water chemistry. Six of the groundwater samples were also analyzed for PAHs and five were analyzed for total metals concentrations.

Laboratory analytical results indicated no VOCs or PAHs were detected in influent and effluent groundwater samples, and groundwater samples collected from monitoring and recovery wells did not contain concentrations of VOCs or PAHs exceeding New Mexico Water Quality Control Commission (NMWQCC) standards. Sulfate concentrations exceeded NMWQCC standards in samples collected from twelve of the thirteen monitoring and recovery wells and from the influent and effluent. Total dissolved solids exceeded NMWQCC standards in groundwater samples collected from all thirteen monitoring and recovery wells and from the influent and effluent. Chloride concentrations exceeded the NMWQCC standard in groundwater samples collected from one upgradient monitoring well and one on-site monitoring well. The influent, effluent, and ten of the thirteen monitoring and recovery wells contained manganese in excess of NMWQCC standards. Iron concentrations exceeded the NMWQCC standard in all thirteen monitoring and recovery wells. Chromium and selenium concentrations exceeded NMWQCC



standards in upgradient monitoring wells. These parameters can be attributed to an upgradient release at the Lee Acres Landfill in 1985 or to naturally occurring background conditions.

Based on the results presented in this report, Western will continue PSH recovery and operation of the remediation system. Western will continue monitoring of groundwater flow behavior, as well as influent and effluent sampling and laboratory analysis. Annual sampling of monitoring wells and recovery wells will continue.



### 1.0 INTRODUCTION

LT Environmental, Inc. (LTE) prepared this report on behalf of Western Refining Southwest, Inc. (Western) to summarize work completed from January through December 2013 at the former Giant Bloomfield Refinery (Site) in Bloomfield, New Mexico.

### 1.1 SITE DESCRIPTION

The Site is 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, aboveground storage tanks, two carbon filtration tanks, an infiltration trench, groundwater monitoring wells, and groundwater recovery wells (Figure 2).

### 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 were identified and investigated as part of the site closure requirements in 1986 prescribed by the New Mexico Oil Conservation Division (NMOCD). 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 fire fighting drill area east and upgradient of the Site may have collected in a former seep and a stormwater catchment area.

Concurrent with refinery operations, the former Lee Acres Landfill located upgradient 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 that were 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 and the United States Geological Survey published their results in three reports referenced in Section 6.0 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, 1,1,1-trichloroethane, and trichloroethene.

Beginning in 1988, Giant installed a groundwater recovery, treatment, and disposal system in stages at the Site to restrict migration of contaminants and to remediate groundwater impacts caused by Giant's 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 completed 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.

As groundwater quality improved over time, the remediation system was gradually simplified. In 2013 the system consisted of 9 active groundwater recovery wells that pump groundwater into a single storage tank (Tank 102). Groundwater from Tank 102 is pumped to a carbon filtration tank, and then passes through a treated water infiltration trench (Figure 2). Following initial contaminant reduction, the groundwater remediation system has operated in an operation and maintenance mode. Concentrations of contaminates within the remediation system's influent and effluent were below laboratory detection limits for 18 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 repaired 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 2013.

### 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-Teritary 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. 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.

The subsurface geology is a controlling feature for groundwater flow direction and 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

The scope of work for this project included operating and maintaining the groundwater remediation system, monitoring groundwater quality and presence of PSH, and recovering PSH. A summary of field activities, results, conclusions, and recommendations are presented in the subsequent sections of this report.

### 2.0 METHODOLOGY

### 2.1 GROUNDWATER REMEDIATION SYSTEM

The groundwater remediation system at the Site was designed to pump impacted groundwater from local aquifers through a series of recovery wells, which prevent migration of impacted groundwater beyond the influence of the wells as illustrated on Figure 5. Groundwater is collected in Tank 102 then pumped through two active carbon filters positioned in series where the groundwater is treated by carbon absorption. The treated water is then returned to the aquifer through an infiltration trench. The infiltration trench consists of a subsurface system of perforated polyvinyl chloride (PVC) pipes placed within gravel packs. Water infiltrates the surrounding strata and eventually returns to the aquifer. The return of recovered water to the aquifer acts as a recharge mechanism. Figure 6 is a simplified diagram representation of the groundwater recovery, treatment, and disposal system at the Site.

### 2.2 OPERATIONS AND MAINTENANCE

LTE conducted weekly inspections to ensure normal operation of the remediation system. A panel located in the control building controls operation of the remediation system and incorporates shutdown functions to safeguard against a tank overflow and other undesirable events. The control panel was monitored weekly, as were water flow meters at the storage tank and each recovery well. Weekly observations were recorded in a bound field log book with the date, time, and person recording the information noted. Water flow meter readings were entered into a spreadsheet to calculate flow volumes and monitor cumulative flow rates. All equipment at the Site was inspected for leaks and malfunctions. The inspector was familiar with the location of



underground lines and noted any surface indication of underground leaks. No groundwater leaks were noted during inspections conducted in 2013.

Maintenance included repair and replacement of well pumps, pump controllers, and flow meters, and replacement of the carbon filtration tanks. Additionally, LTE replaced filters in well houses on a regular basis, inspected the carbon pre-filter, and repaired any other hardware as necessary.

### 2.3 PSH RECOVERY

Oil absorbent socks were used to passively recover PSH detected in groundwater monitoring wells at the Site. The socks were monitored weekly from January through December and replaced when they were greater than 50 percent full. Volumes of recovered PSH were estimated based on percent saturation observed in the socks and were recorded in a field log book. In addition, LTE and Western manually recovered PSH from GBR-34, SHS-2, SHS-9, and GBR 25 when present with disposable bailers.

### 2.4 GROUNDWATER MONITORING

Quarterly groundwater monitoring included measurements of depth to groundwater at all monitoring and recovery wells with a Keck oil-water interface probe. The interface probe was decontaminated with Alconox<sup>TM</sup> soap and rinsed with de-ionized water before each measurement. Depth to groundwater measurements were used to calculate quarterly groundwater elevations at the Site to determine direction of groundwater flow and hydraulic control achieved by the recovery wells. The recovery pumps were not turned off during quarterly monitoring events nor were the pumps removed from the recovery wells; therefore, calculated groundwater elevations do not represent static conditions.

Influent and effluent groundwater samples were collected quarterly and analyzed for general water chemistry parameters including pH, electrical conductivity (EC), TDS, alkalinity, hardness, anions (bromide, chloride, sulfate, fluoride, nitrite, nitrate, and phosphate), and cations (calcium, iron, magnesium, manganese, potassium, and sodium) and for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260B. The effluent groundwater sample was also analyzed annually for polynuclear aromatic hydrocarbons (PAHs) according to USEPA Method 8310 and total metals (barium, beryllium, cadmium, chromium, copper, nickel, silver, zinc, antimony, arsenic, selenium, and thallium) according to USEPA Method 200.7 and 200.8, and mercury according to USEPA Method 245.1. Influent groundwater was collected from a system valve before it entered the carbon filtration unit. Effluent groundwater was collected through a sample valve as treated water exited the second carbon filter. Groundwater samples were collected in appropriate pre-cleaned and/or prepreserved sample bottles or glass vials. Samples were labeled with the date and time of collection, sample designation, project name, collector's name, and parameters to be analyzed and immediately sealed and packed on ice. The samples were shipped on ice following strict chain-of-custody procedures to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico, before designated holding times expired.

LTE collected annual groundwater samples from groundwater monitoring wells and recovery within and south of the Site (Table 1). 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 bailed dry, indicating the purge water was representative of aquifer conditions. Stabilization was defined as three consecutive stable readings for each water property (±0.4 units for pH, ±10 percent for electric conductivity, and ±2° Celsius for temperature). Once each monitoring well was properly purged, groundwater samples were collected in bottles or vials and shipped to HEAL. Groundwater sampling from recovery wells followed the same procedures as monitoring wells, except pumps installed in recovery wells were used to purge the appropriate volume of groundwater from each recovery well. The groundwater samples were analyzed for VOCs according to USEPA method 8260B and general water chemistry parameters including pH, EC, TDS, alkalinity, hardness, anions (bromide, chloride, sulfate, fluoride, nitrite, nitrate, and phosphate), and cations (calcium, iron, magnesium, potassium, and sodium). Six of the groundwater samples were analyzed for PAHs according to USEPA Method 8270C and five groundwater samples were analyzed for total metals (barium, beryllium, cadmium, chromium, copper, lead, nickel, silver, zinc, antimony, arsenic, selenium, and thallium) according to USEPA Method 200.7 and 200.8, and mercury according to USEPA Method 245.1

### 3.0 RESULTS

### 3.1 OPERATIONS AND MAINTENANCE

LTE and Western worked concurrently to keep the groundwater remediation system fully operational. Repairs and observations included:

- On January 10, 2013, piping to the infiltration gallery froze preventing flow to the carbon absorption tanks. The plumbing and electrical equipment were performed and the system was brought back online within two weeks;
- An electrician began updating the electrical system in February 2013. The controllers and electrical boxes were replaced and heat lamps were installed in GRW-3, GRW-6, GRW-5, GRW-4, GRW-2;
- Western replaced the carbon absorption tanks at the end of February 2013. At this time Tank 102 was drained and bypassed until the installation was complete; the recovery wells pumped straight to the carbon absorption tanks;
- Tank 102 was put back into use in March 2013;
- In September 2013, a lighting strike damaged the motor for the pump at Tank 102. The motor was replaced with a higher powered motor. The new motor moved water through Tank 102 at a higher rate and pressure;
- The new motor on the pump at Tank 102 created a water imbalance in Tank 102, draining water too fast and triggering low level alarms that shut the pump down. At the end of 2013 Western bypassed Tank 102 and recovery wells pump directly to the carbon absorption tanks;



• No surface indications of underground leaks were observed in 2013.

Except for GRW-4 and GRW-13, the recovery wells pumped smaller volumes of groundwater in 2013 as compared to 2012. In total, the system pumped 538,714 fewer gallons in 2013 compared to 2012. Mechanical problems with pumps; frozen piping in the infiltration gallery; replacement of the carbon absorption tanks; and water level balance issues in Tank 102 required more down time in 2013 than in 2012. Additionally, GRW-10, which is the highest producing recovery well, recovered less water in 2013. Table 2 presents the total volume of groundwater pumped from each recovery well during 2012 and 2013. A total of 1,180,284 gallons of groundwater were recovered and treated by carbon filtration in 2013.

### 3.2 GROUNDWATER ELEVATION

Groundwater elevations measured in groundwater monitoring and recovery wells are presented in Table 3 and quarterly potentiometric surface maps are depicted on Figures 7 through 10. When PSH is detected, the groundwater elevation is corrected using an estimated density correction factor of 0.88. Groundwater flow direction was consistently toward the southwest throughout the year. Drawdown around recovery wells is evident each quarter. Groundwater elevations in most wells were lower during 2013 than in the past, which is a regional trend resulting from the ongoing drought.

### 3.3 PSH RECOVERY

Thin accumulations of PSH were detected in groundwater monitoring wells near the source areas identified in the preliminary subsurface investigation conducted by Giant. Oil-absorbent socks were installed and maintained in monitoring wells GBR-7, GBR-8, GBR-11, GBR-20, GBR-22, GBR-25, GBR-26, GBR-34, SHS-2, SHS9, and product recovery well GBR-34A during 2013 (Figure 11). Annual volumes of PSH recovered from 2009 through 2013 are presented in Table 4. Less PSH was recovered in 2013 as compared to 2012.

In the Northern Area, LTE did not detect measurable PSH in GBR-23, GBR-25 and GBR-26 in 2013, but approximately 1.78 gallons of PSH were recovered with oil absorbent socks during the year.

In the Central Area, early in the year LTE regularly detected and recovered PSH in GBR-34. The thickness of PSH in GBR-34 was as high as 0.40 feet in January 2013. No PSH has been measured in GBR-34 since April of 2013. A total of 5.3 gallons of PSH were removed from GBR-34 using oil-absorbent socks and manual bailing. The cross sections depicted on Figures 3 and 4 indicate a small depression in the groundwater table at GBR-34 that may be controlling PSH accumulations at this location. LTE removed a total of 1.24 gallons of PSH from GBR-22 during 2013 using oil-absorbent socks.

In the Southern Area, no PSH was detected in GBR-7, GBR-8, GBR-11, or GBR-20 during 2013. LTE continued to recover small volumes of PSH in oil absorbent socks throughout the year. A total amount of 2.02 gallons of PSH were recovered from the Southern Area.

In 2012 for the first time since October 2004, PSH was discovered in groundwater monitoring wells south of Highway 64. SHS-2 and SHS-8 contained 0.01 feet of PSH on October 4, 2012. In



January 2013, PSH was discovered in SHS-9 for the first time since 2005. SHS-9 contained 0.01 feet of PSH in January 2013. No PSH was measured in SHS-8 in 2013 and no PSH was measured in SHS-2 or SHS-9 after May 2013.

### 3.4 GROUNDWATER SAMPLING

Laboratory analytical results from groundwater sampling are presented in Table 5 and the complete laboratory analytical reports are 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 from 2013 as compared to NMWOCC standards are summarized below:

- No VOCs exceeded laboratory detection limits in influent or effluent samples;
- VOCs were detected in the annual groundwater samples, but only in minor concentrations that did not exceed NMWQCC standards:
  - EDC was detected in groundwater from monitoring well GBR-24D;
  - Tetrachloroethene (PCE) was detected in groundwater in upgradient monitoring wells GBR-32, GBR-48 and GBR-49;
  - Acetone was detected in groundwater from monitoring well GBR-24D;
- Concentrations of PAHs were not detected above the respective laboratory limits in samples collected from the system effluent. Samples collected from GRW-3 and GBR-31 contained minor concentrations of PAHs;
- Sulfate concentrations exceeded the NMWQCC standard in samples collected from the groundwater monitoring and recovery wells, system influent, and system effluent;
- TDS exceeded the NMWQCC standard in samples collected from the groundwater monitoring and recovery wells, system influent, and system effluent;
- Chloride concentrations exceeded the NMWQCC standard in groundwater samples collected from up-gradient well GBR-32, and at GBR-30;
- The total chromium concentration in groundwater from GBR-48 exceeded the NMWQCC standard. GBR-48 is located within the arroyo adjacent to and upgradient of the Site;
- Iron concentrations exceeded the NMWQCC standard in the annual groundwater samples from all groundwater recovery and monitoring wells, but did not exceed the standard in the influent and effluent samples;
- Manganese was detected in concentrations exceeding the NMWQCC standard in annual groundwater samples from GRW-3, GRW-6, GBR-24D, GBR-30, GBR-31,



GBR-32, GBR-48, GBR-49, GBR-51, SHS-8, as well as from the influent and effluent samples;

- The lead concentration exceeded the NMWQCC standard in groundwater sampled from SHS-9;
- The concentration of selenium exceeded the NMWQCC standard in groundwater from upgradient monitoring well GBR-48.

### 4.0 CONCLUSIONS

Western successfully maintained the groundwater remediation system at the Site and continued to recover residual PSH from original source areas. The volume of groundwater recovered at the Site decreased due to downtime associated with ongoing maintenance and upgrading of the remediation system, as well as decreased production in GRW-10.

Measurable PSH near the previously identified sources at the Site decreased in 2013 compared to 2012. The presence of PSH south of Highway 64 is most likely residual PSH that was trapped in the smear zone near the monitoring wells and exposed as the result of a significant rain event that increased groundwater elevations rapidly combined with an overall groundwater elevation decrease resulting from ongoing drought conditions. After several months of PSH recovery using a combination of absorbent socks and manual recovery no PSH was detected south of Highway 64 after May 2013.

Contaminants of concern were either not detected in groundwater samples or, if detected, can be attributed to an upgradient source or naturally occurring background conditions. The influent and effluent groundwater associated with the remediation system at the Site did not contain detectable concentrations of VOCs or PAHs during 2013, and groundwater samples collected from monitoring and recovery wells did not contain VOCs or PAHs exceeding NMWQCC standards.

Influent and effluent water associated with the pump and treat system at the Site is consistently compliant with standards for general chemistry parameters and metals, with the exception of TDS, chloride, and sulfate. Elevated sulfate, chloride, and TDS are historically characteristic of groundwater at the Site and are most likely related to a release at the Lee Acres Landfill in 1985. These analytes were identified in earlier studies as constituents within the groundwater contaminant plume that originated from the landfill. Previous investigations at the landfill reported elevated levels of chloride present in the water sampled from liquid waste lagoons (McQuillan, D. and Longmire, P., Water Quality Investigations at the Lee Acres Landfill and Vicinity, San Juan County, New Mexico), and the landfill accepted produced water from natural gas well operations in the San Juan Basin. During initial landfill investigations, the upgradient area near GBR-32, GBR-48, GBR-49, and GBR-50 was identified as the "northern containment slug." Groundwater representative of this area contained TDS concentrations ranging from 2,125 milligrams per kilogram (mg/kg) to 6,068 mg/kg, sulfate concentrations ranging from 1,920 mg/kg to 5,830 mg/kg, and chloride concentrations ranging from 14.7 mg/kg to 2,110 mg/kg (Roy F. Weston, Inc., Remedial Investigation Report for Lee Acres Landfill, Volume 1).



Heavy metals, including chromium, iron, lead, manganese, nickel, and selenium were detected in offsite monitoring wells during the annual sampling in January 2013. Additionally, iron and manganese concentrations exceeded NMWQCC standards in on-site wells. Previous studies conducted for the Lee Acres Landfill identified chromium, iron, lead, manganese, nickel, and selenium in groundwater sampled upgradient of the Site. The Remedial Investigation Report for Lee Acres Landfill, Volume 1 states that the upgradient background alluvial aquifer contains elevated levels of chromium and manganese and suggests an unidentified source that is unrelated to the landfill or the Site.

### 5.0 RECOMMENDATIONS

Western will continue to operate the remediation system and monitor groundwater as described in this report, including the activities below:

- Operate and maintain the remediation system to prevent migration of PSH;
- Monitor presence of PSH regularly, using oil absorbent socks as needed to recovery PSH;
- Monitor groundwater flow behavior quarterly by measuring depth to groundwater;
- Sample the system influent and effluent quarterly; andSample groundwater monitoring and recovery wells annually, including SHS-8 south of the Site, to identify potential changes in water quality.

### 6.0 REFERENCES

- AEPCO, Inc. Site Investigation Report for Lee Acres Site, San Juan County, New Mexico (Final Report), BLM Contract NO. AA852-Ct5-26, U.S. Department of the Interior, BLM, Washing D.C., May 1986.
- McQuillan, D. and Longmire, P. Water Quality Investigations at the Lee Acres Landfill and Vicinity, San Juan County, New Mexico, Environmental Division, Ground water/Hazardous Waste Bureau, Santa Fe, NM, February 1986.
- Peter, K., Williams, R.A. and King, K.W. *Hydrogeologic Characteristics of the Lee Acres Landfill Area, San Juan County, New Mexico*, U.S. Geological Survey Water Resources Investigations Report 87-4246, Albuquerque, NM, 1987.
- Roy F. Weston, Inc. Remedial Investigation Report for Lee Acres Landfill, Volumes 1-3, Albuquerque, NM, September 1992.
- Roy F. Weston, Inc. Proposed Emergency Action for Lee Acres Landfill, Albuquerque, NM, November 1990.



Geoscience Consultants, LTD., Soil and Groundwater Investigations and Remedial Action Plan, Giant Industries, Inc. Bloomfield Refinery, Bloomfield, New Mexico, 1987.

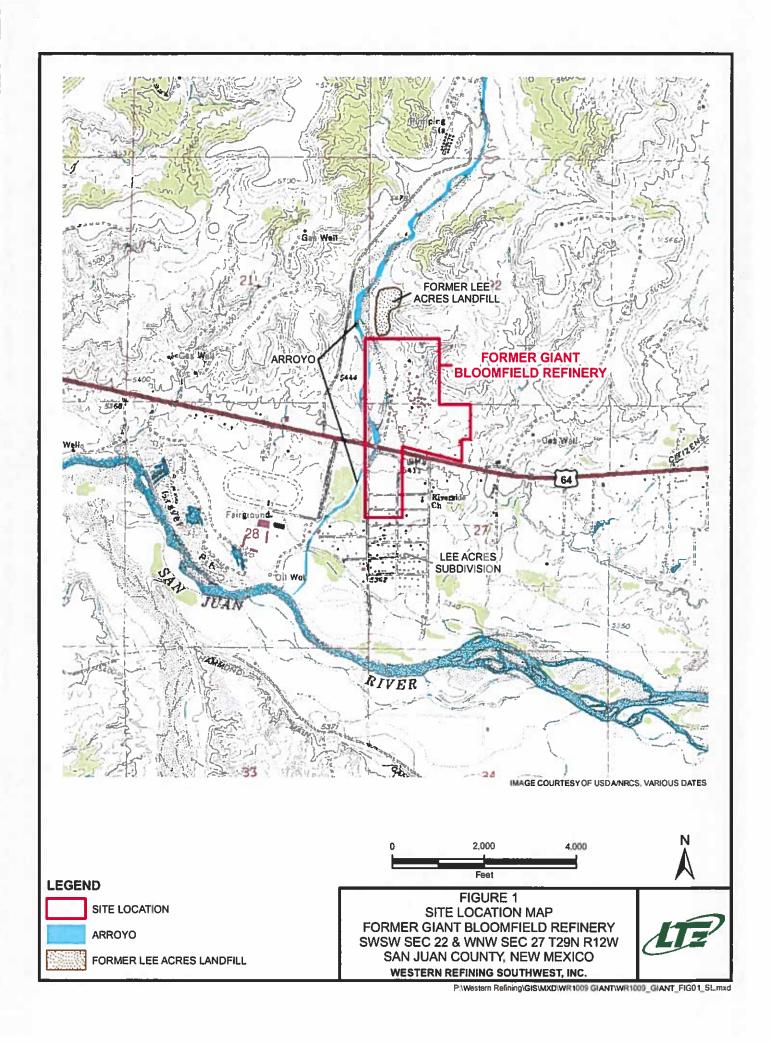
Lodestar Services, Inc., Annual Data Report Former Giant Bloomfield Refinery, March 2009.

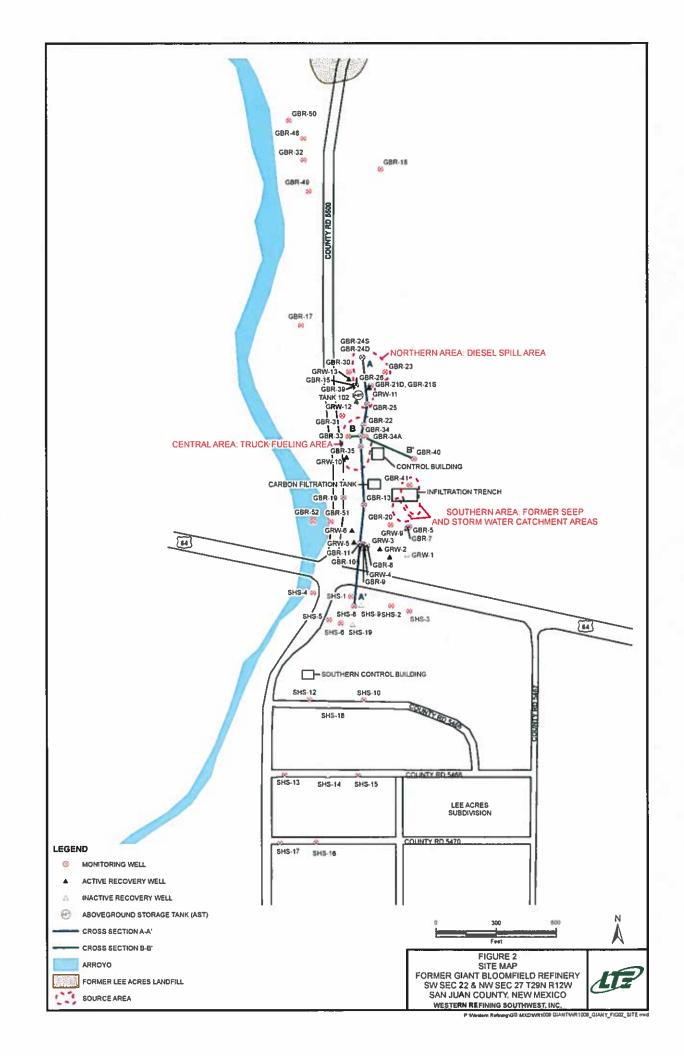
RPS JDC Consulting, Review of Groundwater Remediation System, Old Giant Bloomfield Refinery, Bloomfield, New Mexico, June 2009.

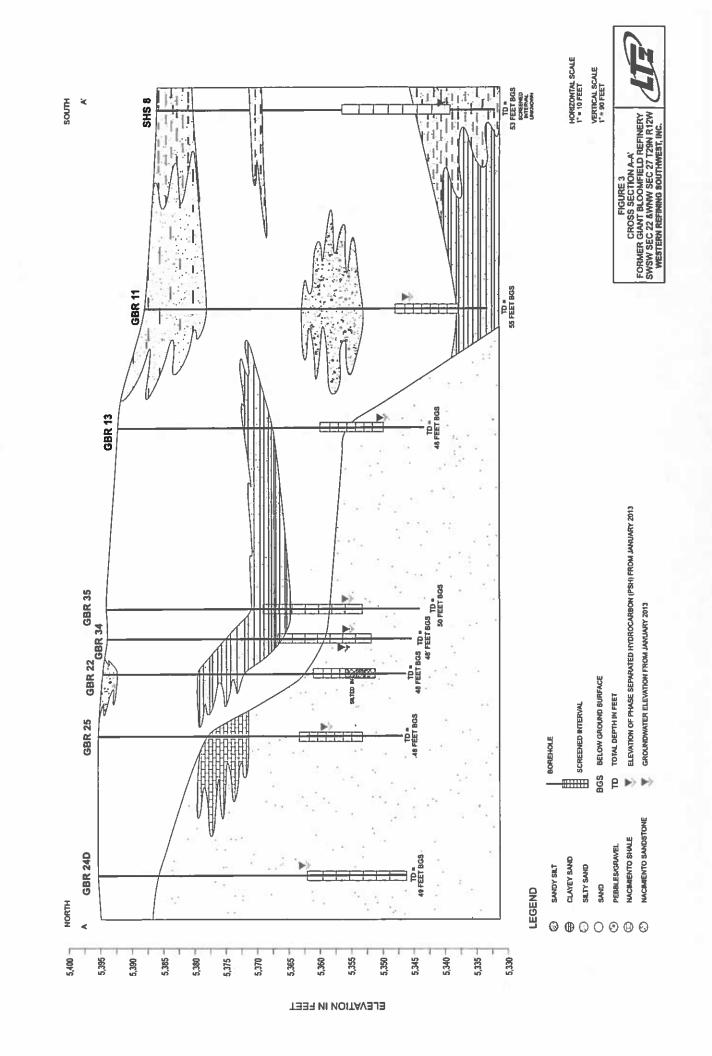


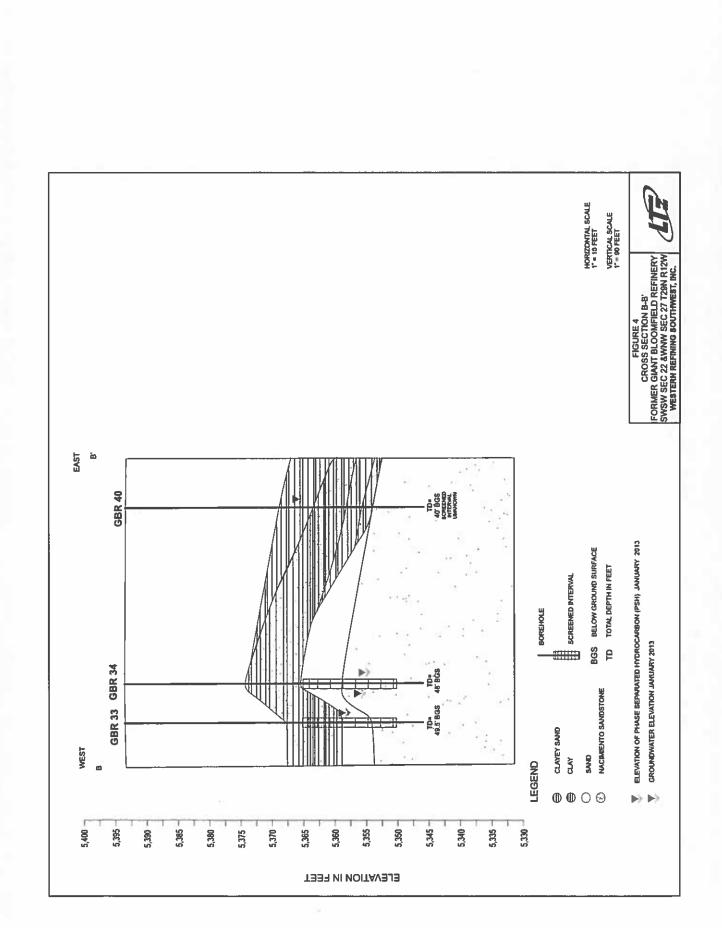
**FIGURES** 

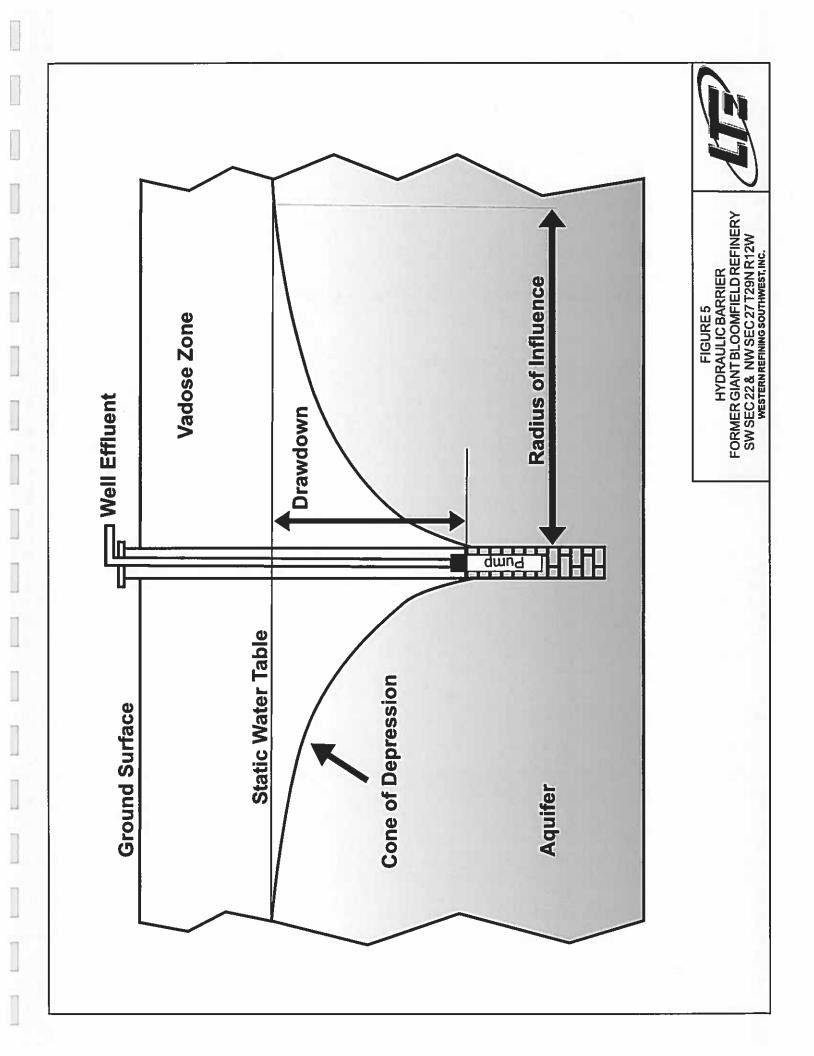


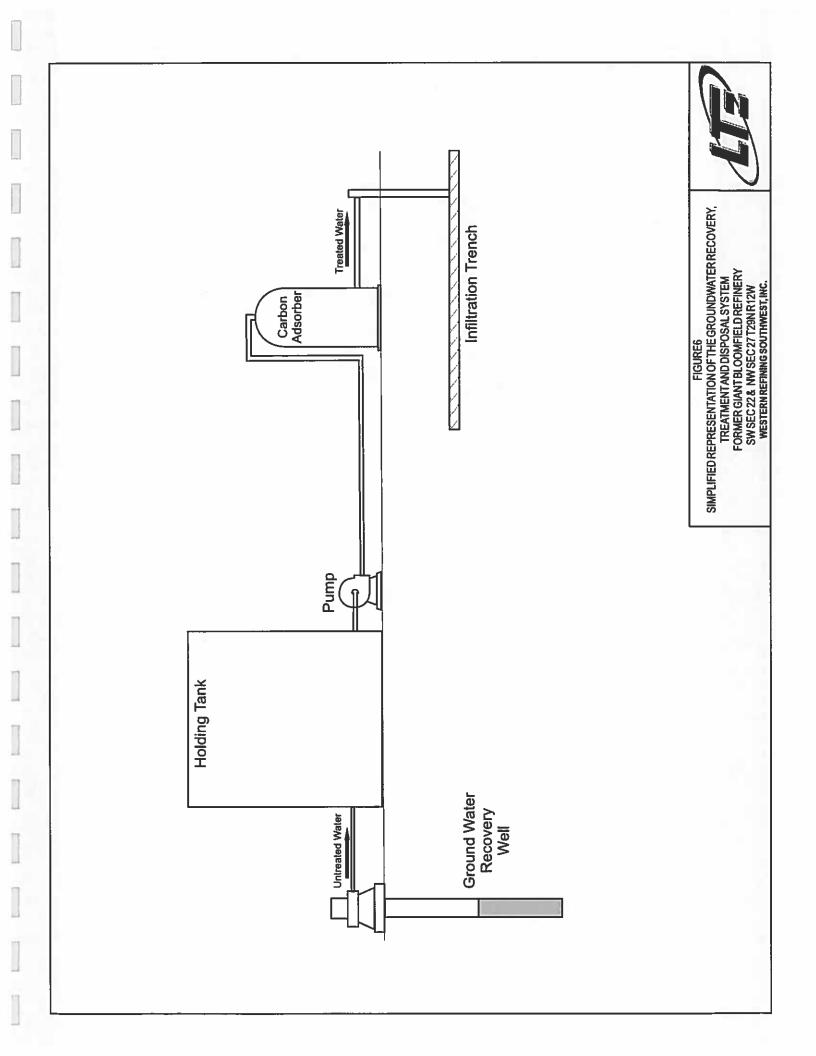


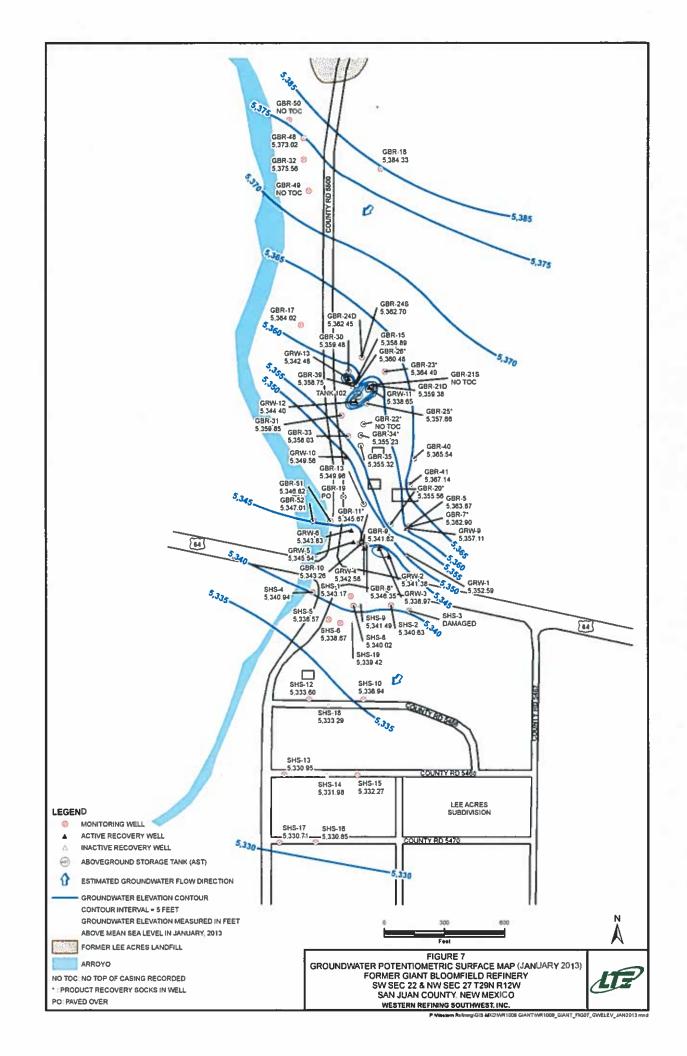


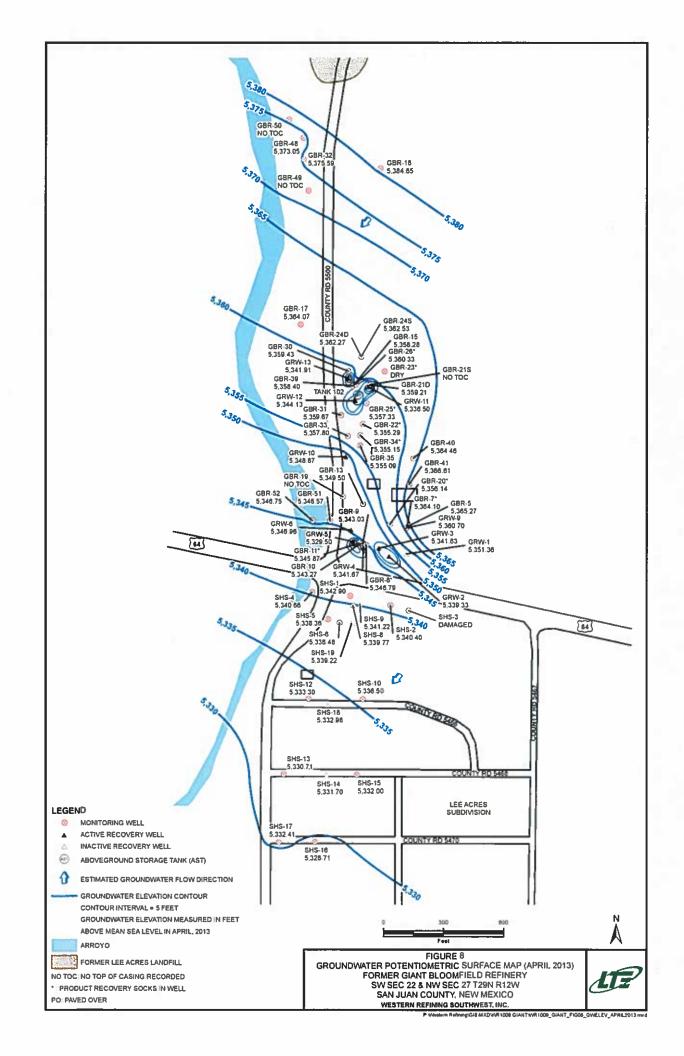


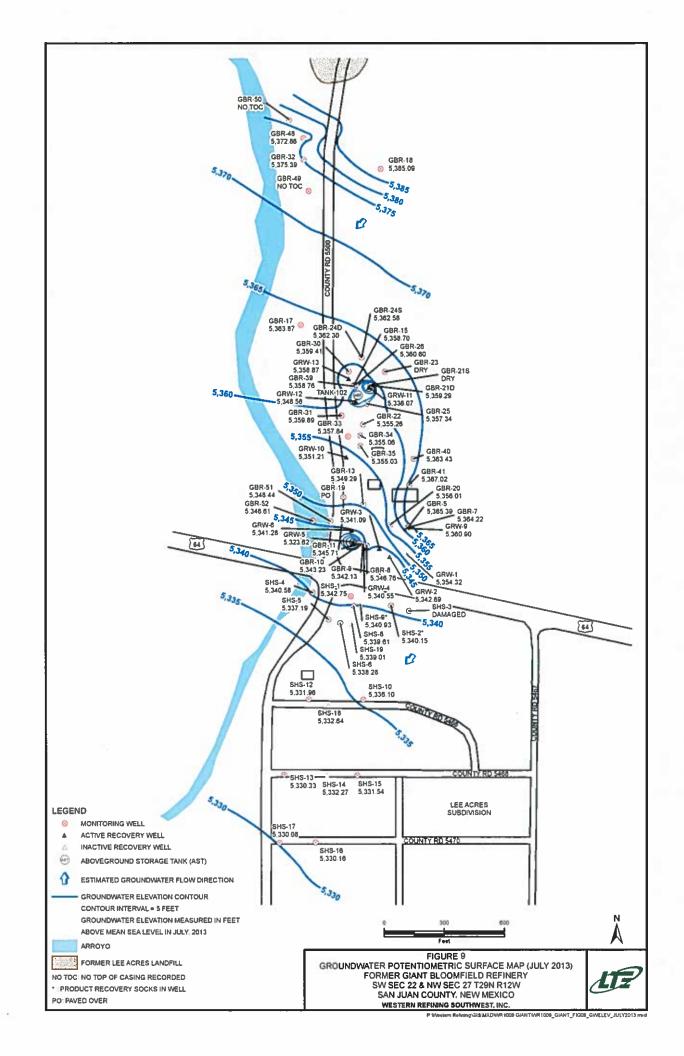


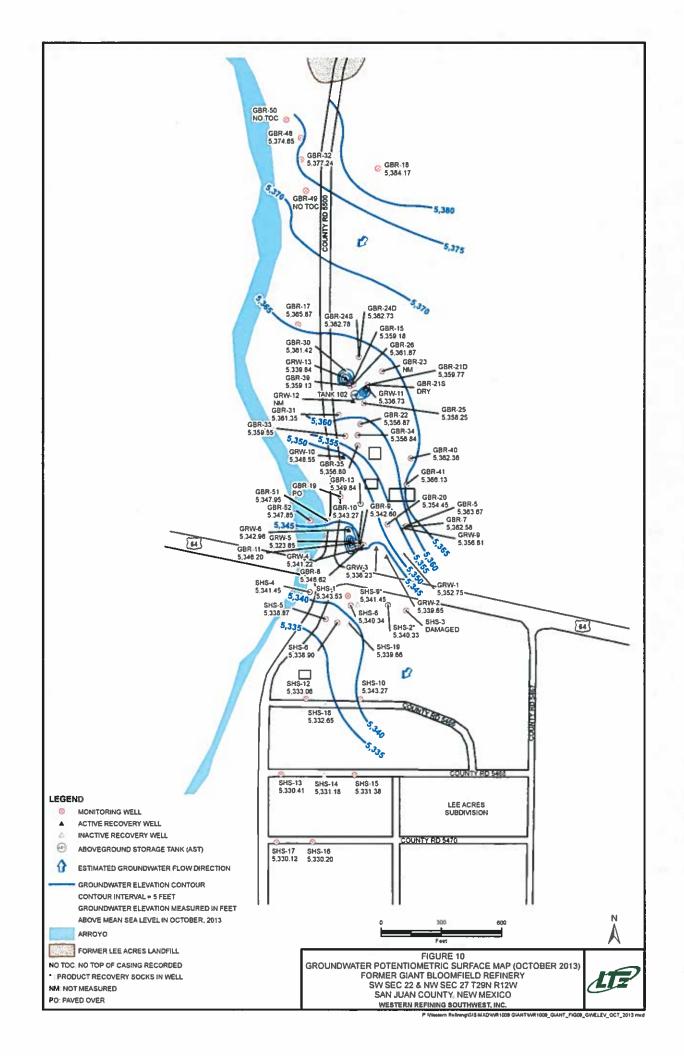


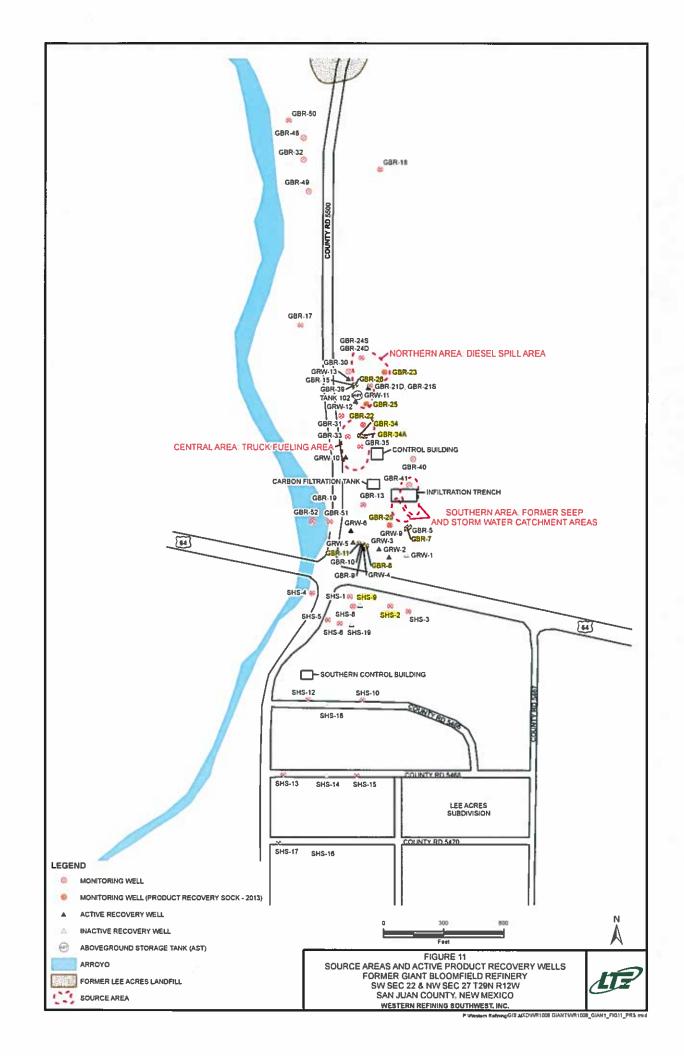












**TABLES** 





TABLE 1

### 2013 SAMPLING SCHEDULE FORMER GIANT BLOONIFIELD REFINERY WESTERN REFINING SOUTHWEST, INC.

	Jan-13	Apr-13	Jul-13	Oct-13
System Influent	DWD,2DOV	VOCs, GWC	VOCs, GWC	VOCs, GWC
System Effluent	VOCs, GWC, PAIIs. Metals	VOCs, GWC	VOCs, GWC	VOCs, GWC
GRW-3	VOCs,GWC,PAHs			
GRW-6	VOCs, GWC, PAIIs			
GBR-17	VOCs, GWC, PAIIs			
GBR-24D	VOCs.GWC.PAHs			
GBR-30	VOCs,GWC,PAHs		_	
GBR-31	VOCs,GWC,PAHs			
GBR-32	VOCs, GWC, Metals			
GBR-48	VOCs, GWC, Metals			
GRR-49	VOCs. GWC. Metals			
GBR-50	VOCs. GWC. Metals			
GBR-51	VOCs.GWC			
GBR-52	VOCs,GWC			
SHS-8	VOCs, GWC			

### Notes:

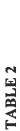
GWC - Ground Water Chemistry , PH, EC, TDS, alkalinity, hardness, anions (bromide, ehloride, sulfate, flouride, nitrate/nitrite, phosphorus). cations (calcium, iron, magnesium, manganese, potassium, sodum)

Metals - barium, beryllium, cadmium, chromium, copper, lead, nickel, silver, zinc, antimony, arsenic, selenium, thallium, mercury

PAHs - polynuclear aromatic hydrocarbons

VOCs - volatile organic compounds





# GROUNDWATER RECOVERY WELL VOLUME TABULATION FORMER GIANT BLOOMFIELD REFINERY WESTERN REFINING SOUTHWEST, INC.

Well Number	Total Volume Pumped in 2012 (Gallons)	Total Volume Pumped in 2013 (Gallons)	Difference (Gallons)
GRW-1	0	2,347	
GRW-2	86,086	76,737	-15,349
GRW-3	82,446	60,128	-22,318
GRW-4	65,700	72,219	6,519
GRW-5	78,919	59,977	-18,942
GRW-6	102,215	890'88	-14,147
GRW-10	1,038,356	647,197	-391,159
GRW-11	143,855	73,251	-70,604
GRW-12	95,413	80,623	-14,790
GRW-13	26,008	28,084	2,076
Total Volume Pumped (Gallons)	1,718,998	1,180,284	-538,714





## GROUNDWATER ELEVATIONS AND THICKNESS OF PHASE-SEPARATED HYDROCANBONS FORMER GRANT BLOOMFIELD REFINERY WESTERN REFINING SOUTHWEST, INC.





# GROUNDWATER ELEVATIONS AND THICKNESS OF PHASE-SEPARATED HYDROCARBONS FORMER GLANT BLOOMPIELD REFINERY WESTERN REFINING SOUTHWEST, INC.

			_	_	-	_			_	_		_	_	_			_	_		
	Adjusted	CWEL	(feet)	5,443,53	5.340.11		\$341.45	5,338.87	5 44B 90	\$ 340 34	5,341.45	3343.27	53)3.06	5,330.41	5,341,18	\$111.38	5,730.20	5,130.12	5,312.65	4,119 66
October 2013	PSH	Thickness	(feet)				,		,			,			,				•	
Octob	Depth to	Product	(feet)		•	,	×	•	,	,	ļ.		,	•	+	·	•	·	1	
	Depth to	Aless BTDC)	1	10.05	11.11		42.17	19,49	19.27	19.91	39,34	30.53	10 23	37.40	15,89	14.83	32.18	34.23	10,99	19.21
	Adjusted	CWE!	(feed)	5,142,75	5,440.15	1	5,140,58	5,137.19	5,318.28	13961	\$ 140 93 †	4.136.10	5,331,96	5, 130, 13	5 112 27	5,131,54	5,140,16	\$ 110.03	\$,332 to 4	10.611,5
July 2013	PSH	Thickness	(feet)	*		٠		+		,										
Jel	Depth to	Pradect	(feet)	,	*		ï	٠	9		,	,	•	,	ś	,	,		×	
	Depth to	Constitution of	1000	40.79	41.51	,	13.04	41.17	19.89	10 64	39.86	37,70	86 IP	17.48	34 80	79 PC	32.42	14.27	71 (to	19 83
	Adjasted	GWEL	(feet)	5,142.90	5,346.19	,	5,340,66	3,312 36	5,118.48	5,319.77	901155	5,336,50	5,113,310	5,330,71	5,731,70	5,332.00	5,328.71	5,312,41	5,312.98	5,119,22
April 2013	PSH	Thickness	(leet)		100						B   B	•	٠	,	٠	٠	b	•	•	,
Apr	Derpith to	Predect	([scl)	•	% I +	,	,	•	,	,	39.53		,		,	,		•		•
	Depth to	(fores	BTOC	10.64	41.27	٠	96 77	10 00	1969	40.43	39.73	37.30	34	27.10	14 17	14.21	33 87	# #	90 00	1967
	Adjusted	CWEL	(frei)	5,343-17	5,340.63	٠	5, 140 94	5,338,57	S. 11H 67	5,540 02	S. 141 49	5,336.94	5,333 60	\$330.95	5,111.91	5,112,27	5,340 RS	5 470 71	5,111,29	4,119.47
James 2003	i .	Thickness	(feet)				,	,	,	,	4	Þ	•	4		•	•	,	,	,
James	Depth Is	Predect	(feet)	ŀ			1		,	,	,		,	,	•	٠	٠	•		
	Depth to	1	BTOC	40.37	4103	•	42.68	19.79	39.50	40.23	29 G	36 R.6	其章	36.86	35.09	33.94	31.73	33.62	40.35	19.47
	Telal	1		97-05	<i>5</i> .	•	52 16	_	_	\$0.65	_	_	52.41	17.51	51.71	47.78	_	<u>-</u> ;	47.36	\$2.40
	Wellbrad	(100)		5,787.54	5,38166	5.323 11	5.183.62	5,378,36	5378.17	5,380,25	4,380.79	5.373 Bit	437394	5.367.81	1,367.07	5,166,21	5 362 58	536435	537364	4 17R R9
	Well	Number		SHS-1	SHS-1	SHS-3**	SIIS	SHS-S	SHS-4	15115	SHS	SHS-10	SHS-12	SIIS-I3	SHS-14	SHS-15	SHS-16	SHS-17	SHS-II	SHS-19

Note:

Discovered to the control of the control of



# ESTIMATED VOLUMES OF PHASE-SEPARATED HYDROCARBONS RECOVERED FROM GROUNDWATER MONITORING WELLS FORMER GIANT BLOOMFIELD REFINERY WESTERN REFINING SOUTHWEST, INC.

GBR-7         (ounces)         (ounces) <t< th=""><th>Well Number</th><th>2009 Total</th><th>2010 Total</th><th>2011 Total</th><th>2012 Total</th><th>2013 Total</th><th>Cumulative Total</th></t<>	Well Number	2009 Total	2010 Total	2011 Total	2012 Total	2013 Total	Cumulative Total
0.1         0.0         24.7         42.5         34           no sock         no sock         15.8         51.85         41.65           no sock         no sock         17.0         25.2         164.9         113.05           no sock         17.0         25.2         164.9         113.05         113.05           9.0         48.2         8.5         38.2         17         178.95           9.0         45.6         59.5         117.3         170.5         170.5           17.9         0.0         10.2         60.35         40.8         170.5           12.8         63.2         713.8         1.297.40         679.60         113.9           no sock         no sock         no sock         10.5.5         330.56         113.9           no sock         no sock         no sock         149.10         13.9         17.32         15.00           7.8.3         17.32         17.32         15.00         15.00         15.00         15.00		(onuces)	(onnces)	(onuces)	(onnces)	(onuces)	(onuces)
no sock         no sock         15.8         51.85         41.65           no sock         17.0         25.2         164.9         113.05           no sock         17.0         25.2         164.9         113.05           9.0         17.0         25.2         164.9         113.05           17.0         0.0         18.7         280.95         158.95           17.9         45.6         59.5         117.3         170.5           17.9         0.0         10.2         60.35         40.8           12.8         63.2         713.8         1.297.40         679.60           no sock         no sock         no sock         113.9         113.9           no sock         no sock         no sock         149.10           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-7	0.1	0.0	7.42	42.5	34	101.2
no sock         no sock         17.0         25.2         164.9         113.05         113.05           0.2         0.0         18.7         280.95         113.05         113.05           38.4         48.2         8.5         38.2         17         17           9.0         45.6         59.5         117.3         170.5         17           17.9         0.0         10.2         60.35         40.8         170.5           no sock         no sock         125.5         330.56         113.9           no sock         no sock         no sock         149.10         13.9           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-8	no sock	no sock	23.8	51.85	41.65	117.3
no sock         17.0         25.2         164.9         113.05           0.2         0.0         18.7         280.95         158.95           38.4         48.2         8.5         38.2         17           9.0         45.6         59.5         117.3         170.5           17.9         0.0         10.2         60.35         40.8           12.8         63.2         713.8         1,297.40         679.60           no sock         no sock         10.5.5         330.56         113.9           no sock         no sock         no sock         149.10           78.3         174.0         900.13         2,216.95         1,919.66           7.03         17.32         15.00	GBR-11	no sock	no sock	15.8	34	70.55	120.4
0.2         0.0         18.7         280.95         158.95           38.4         48.2         8.5         38.2         17           9.0         45.6         59.5         117.3         170.5           17.9         0.0         10.2         60.35         40.8           12.8         63.2         713.8         1.297.40         679.60           no sock         no sock         no sock         4.0         113.9           no sock         no sock         no sock         149.10           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-20	no sock	17.0	25.2	164.9	113.05	320.1
38.4         48.2         8.5         38.2         17           9.0         45.6         59.5         117.3         170.5           17.9         0.0         10.2         60.35         40.8           12.8         63.2         713.8         1,297.40         679.60           no sock         no sock         no sock         125.5         330.56           no sock         no sock         no sock         113.9         113.9           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-22	0.2	0.0	18.7	280.95	158.95	458.8
9,0         45.6         59.5         117.3         170.5           17,9         0.0         10.2         60.35         40.8           12.8         63.2         713.8         1,297.40         679.60           no sock         no sock         no sock         4.0         113.9           no sock         no sock         no sock         149.10           78.3         174.0         900.13         2,216.95         1,919.66           6.61         1.36         7.03         17.32         15.00	GBR-23	38.4	48.2	8.5	38.2	17	150.3
17.9         0.0         10.2         60.35         40.8           12.8         63.2         713.8         1.297.40         679.60           no sock         no sock         10.25.5         330.56         113.9           no sock         no sock         4.0         113.9         113.9           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-25	0.6	45.6	59.5	117.3	170.5	401.9
12.8         63.2         713.8         1,297.40         679.60           no sock         no sock         125.5         330.56           no sock         no sock         4.0         113.9           no sock         no sock         149.10           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-26	6.71	0.0	10.2	60.35	40.8	129.3
no sock         no sock         no sock         no sock         4.0         113.9           no sock         no sock         no sock         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-34	12.8	63.2	713.8	1,297.40	679.60	2,766.8
no sock         no sock         no sock         4.0         113.9           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	GBR-34A	no sock	no sock	no sock	125.5	330.56	456.1
no sock         no sock         no sock         149.10           78.3         174.0         900.13         2,216.95         1,919.66           0.61         1.36         7.03         17.32         15.00	SHS-2	no sock	no sock	no sock	4.0	113.9	117.9
78.3 174.0 900.13 2,216.95 1,919.66 0.61 1.36 7.03 17.32 15.00	6- SHS	no sock	no sock	no sock	no sock	149.10	149.1
0.61 1.36 7.03 17.32 15.00	Annual Total (Ounces)	78.3	174.0	900.13	2,216.95	1,919.66	5,289.1
	Annual Total (Gallons)	19.0	1.36	7.03	17.32	15.00	41.3



# 2013 GROUNDWATER LABORATORY ANALYTICAL RESULTS FORMER GIANT BLOONFIELD REFINERY WESTERN REFINING SOUTHWEST, INC.

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Nii - material habed
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NT - not sented
ppf. - micrograms per local
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# APPENDIX A LABORATORY ANALYTICAL REPORTS





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

January 29, 2013

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990

Bloomfield, NM 87413 TEL: (970) 946-1093 FAX (505) 632-3911

RE: GBR Annual Sampling OrderNo.: 1301596

#### Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 12 sample(s) on 1/18/2013 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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. 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.

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

# Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: GBR-24D

**GBR Annual Sampling** 

CLIENT: Western Refining Southwest, Inc.

Collection Date: 1/15/2013 12:35:00 PM

Lab ID: 1301596-002 Matrix: AQUEOUS Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JRR
Fluoride	1.1	0.10	ı	mg/L	1	1/18/2013 4:56:18 PM
Chloride	200	10	ı	mg/L	20	1/18/2013 5:33:32 PM
Bromide	0.96	0.10	l	mg/L	1	1/18/2013 4:56:18 PM
Sulfate	1700	50	•	mg/L	100	1/21/2013 10:17:16 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/18/2013 11:08:42 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Calcium	440	5.0		mg/L	5	1/22/2013 9:47:46 AM
Iron	3.6	0.10	•	mg/L	5	1/22/2013 9:47:46 AM
Magnesium	38	1.0		mg/L	1	1/22/2013 9:44:28 AM
Manganese	1.8	0.010	•	mg/L	5	1/22/2013 9:47:46 AM
Potassium	7.6	1.0		mg/L	1	1/22/2013 9:44:28 AM
Sodium	610	10		mg/L	10	1/22/2013 2:01:13 PM
EPA METHOD 8270C: PAHS						Analyst: JDC
Naphthalene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
1-Methylnaphthalene	_ ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
2-Methylnaphthalene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Acenaphthylene	ND	0.50		µg/L	1	1/23/2013 2:12:14 PM
Acenaphthene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Fluorene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Phenanthrene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Anthracene	ND	0.75		μg/L	1 -	1/23/2013 2:12:14 PM
Fluoranthene	ND	0.75		μg/L	1	1/23/2013 2:12:14 PM
Pyrene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Benz(a)anthracene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Chrysene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Benzo(b)fluoranthene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Benzo(k)fluoranthene	ND	0.50		μg/L	1	1/23/2013 2:12:14 PM
Benzo(a)pyrene	ND	0.50		μg/Ļ	1	1/23/2013 2:12:14 PM
Dibenz(a,h)anthracene	ND	0.75		μg/L	1	1/23/2013 2:12:14 PM
Benzo(g,h,i)perylene	ND	0.75		μg/L	1	1/23/2013 2:12:14 PM
Indeno(1,2,3-cd)pyrene	ND	1.0		µg/L	1	1/23/2013 2 12 14 PM
Surr: Benzo(e)pyrene	63.9	38-145		%REC	1	1/23/2013 2:12:14 PM
Surr: N-hexadecane	59.3	40-107		%REC	1	1/23/2013 2:12:14 PM
EPA METHOD 8260B: VOLATILES						Analyst: RAA
Benzene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
Toluene	ND	1.0		µg/L	1	1/22/2013 1:24:15 AM
Ethylbenzene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		μ <b>g/L</b>	1	1/22/2013 1:24:15 AM
1,2,4-Trimethylbenzene	ND	1.0		μ <b>g/</b> L	1	1/22/2013 1:24:15 AM
1,3,5-Trimethylbenzene	ND	1.0		μ <b>g/L</b>	1	1/22/2013 1:24:15 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 1 of 52

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Client Sample ID: GBR-24D

**GBR Annual Sampling** Collection Date: 1/15/2013 12:35:00 PM Project: Lab ID: 1301596-002 Matrix: AQUEOUS Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
1,2-Dichloroethane (EDC)	1:4	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 1:24:15 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 1:24:15 AM
2-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 1:24:15 AM
Acetone	42	10	µg/L	1	1/22/2013 1:24:15 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 1:24:15 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 1:24:15 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 1:24:15 AM
Carbon Tetrachloride	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 1:24:15 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 1:24:15 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	_1	1/22/2013 1:24:15 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,3-Dichtorobenzene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,4-Dichlorobenzene	ND	1.0	µg/L	1	1/22/2013 1:24:15 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 1:24:15 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
2-Hexanone	ND	10	µg/L	1	1/22/2013 1:24:15 AM
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM
4-Methyl-2-pentanone	ND	10	μg/L	- 1	1/22/2013 1:24:15 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 1:24:15 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 1:24:15 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 1:24:15 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 2 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-24D

Project: GBR Annual Sampling

Collection Date: 1/15/2013 12:35:00 PM

Lab ID: 1301596-002

Matrix: AQUEOUS Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: RAA
sec-Butylbenzene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
Styrene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2013 1:24:15 AM
1,1,1,2-Tetrachloroethane	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
1,1,2,2-Tetrachloroethane	ND	2.0		μg/L	1	1/22/2013 1:24:15 AM
Tetrachloroethene (PCE)	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
trans-1,2-DCE	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
trans-1,3-Dichloropropene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
1,2,3-Trichlorobenzene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
1,2,4-Trichlorobenzene	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
1,1,1-Trichloroethane	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
1,1,2-Trichloroethane	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
Trichloroethene (TCE)	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
Trichlorofluoromethane	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
1,2,3-Trichloropropane	ND	2.0		μg/L	1	1/22/2013 1:24:15 AM
Vinyl chloride	ND	1.0		μg/L	1	1/22/2013 1:24:15 AM
Xylenes, Total	ND	1.5		μg/L	1	1/22/2013 1:24:15 AM
Surr: 1,2-Dichloroethane-d4	89.5	70-130		%REC	1	1/22/2013 1:24:15 AM
Surr: 4-Bromofluorobenzene	90.5	69.5-130		%REC	1	1/22/2013 1:24:15 AM
Surr: Dibromofluoromethane	95.1	70-130		%REC	1	1/22/2013 1:24:15 AM
Surr: Toluene-d8	92.5	70-130		%REC	1	1/22/2013 1:24:15 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	4100	0.010		µmhos/cm	1	1/21/2013 2:55:56 PM
SM4500-H+B: PH						Analyst: JML
рН	7.78	1.68	Н	pH units	1	1/21/2013 2:55:56 PM
SM2320B: ALKALINITY						Analyst: JML
Bicarbonate (As CaCO3)	200	20		mg/L CaCO3	1	1/21/2013 2:55:56 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	1/21/2013 2:55:56 PM
Total Alkalinity (as CaCO3)	200	20		mg/L CaCO3	1	1/21/2013 2:55:56 PM
SM2540C MOD: TOTAL DISSOLVED SC	DLIDS					Analyst: KS
Total Dissolved Solids	3430	40.0		mg/L	1	1/23/2013

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 3 of 52

#### Hall Environmental Analysis Laboratory, Inc. Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-30

Project: **GBR** Annual Sampling Collection Date: 1/15/2013 2:00:00 PM

Lab ID: 1301596-003

Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS					Analyst: JRR
Fluoride	0.67	0.50	mg/L	5	1/18/2013 5:45:56 PM
Chloride	310	10	* mg/L	20	1/18/2013 5:58:21 PM
Bromide	1.0	0.50	mg/L	5	1/18/2013 5:45:56 PM
Sulfate	1500	25	* mg/L	50	1/21/2013 10:29:40 PM
Nitrate+Nitrite as N	2.3	1.0	mg/L	5	1/18/2013 11:21:07 PM
EPA METHOD 200.7: METALS					Analyst: ELS
Calcium	470	5.0	mg/L	5	1/22/2013 10:12:09 AM
Iron	130	4,0	* mg/L	200	1/22/2013 2:08:42 PM
Magnesium	49	1.0	mg/L	1	1/22/2013 10:08:05 AM
Manganese	6.1	0.020	* mg/L	10	1/22/2013 2:05:10 PM
Potassium	11	1.0	mg/L	1	1/22/2013 10:08:05 AM
Sodium	500	10	mg/L	10	1/22/2013 2:05:10 PM
EPA METHOD 8270C: PAHS					Analyst: JDC
Naphthalene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
1-Methylnaphthalene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
2-Methylnaphthalene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Acenaphthylene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Acenaphthene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Fluorene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Phenanthrene	NĐ	0.50	μg/L	1	1/23/2013 3:00:21 PM
Anthracene	ND	0.75	μg/L	1	1/23/2013 3:00:21 PM
Fluoranthene	ND	0.75	μg/L	.1	1/23/2013 3:00:21 PM
Pyrene	ND	0.50	µg/L	1	1/23/2013 3:00:21 PM
Benz(a)anthracene	ND	0.50	μġ/L	1	1/23/2013 3:00:21 PM
Chrysene	ND	0.50	µg/L	1	1/23/2013 3:00:21 PM
Benzo(b)fluoranthene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Benzo(k)fluoranthene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Benzo(a)pyrene	ND	0.50	μg/L	1	1/23/2013 3:00:21 PM
Dibenz(a,h)anthracene	ND	0.75	μg/L	1	1/23/2013 3:00:21 PM
Benzo(g,h,i)perylene	ND	0.75	μg/L	1	1/23/2013 3:00:21 PM
Indeno(1,2,3-cd)pyrene	ND	1.0	μg/L	1	1/23/2013 3:00:21 PM
Surr: Benzo(e)pyrene	77.6	38-145	%REC	1	1/23/2013 3:00:21 PM
Surr: N-hexadecane	82.1	40-107	%REC	1	1/23/2013 3:00:21 PM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Toluene	ND	1.0	µg/L	1	1/22/2013 1:52:30 AM
Ethylbenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	1/22/2013 1:52:30 AM

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits Page 4 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**Project:** GBR Annual Sampling

Lab ID: 1301596-003

Client Sample ID: GBR-30

Collection Date: 1/15/2013 2:00:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES	<del></del>			PER III	Analyst: RAA
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 1:52 30 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 1:52:30 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 1:52:30 AM
2-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 1:52:30 AM
Acetone	ND	10	μg/L	1	1/22/2013 1:52:30 AM
Bromobenzene	- ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Bromoform	_ ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Bromomethane	ND	3,0	μg/L	1	1/22/2013 1:52:30 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 1:52:30 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 1:52:30 AM
Carbon Tetrachloride	ND	1.0	µg/L	1	1/22/2013 1:52:30 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 1:52:30 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Chloromethane	ND	3.0	μ <b>g/</b> L	1	1/22/2013 1:52:30 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	90 or 1	1/22/2013 1:52:30 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 1.52.30 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 1:52:30 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 1:52:30 AM
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 1:52:30 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 1:52:30 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 1:52:30 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 1:52:30 AM

Matrix: AQUEOUS

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- II Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 5 of 52

Date Reported: 1/29/2013

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Lab ID: 1301596-003

Client Sample ID: GBR-30

Collection Date: 1/15/2013 2:00:00 PM Received Date: 1/18/2013 9:53:00 AM

Result **RL Qual Units** DF **Date Analyzed** Analyses **EPA METHOD 8260B: VOLATILES** Analyst: RAA ND 1/22/2013 1:52:30 AM sec-Butylbenzene 1.0 µg/L 1 ND 1.0 µg/L 1 1/22/2013 1:52:30 AM Styrene ND 1.0 1/22/2013 1:52:30 AM tert-Butylbenzene µg/L 1,1,1,2-Tetrachloroethane ND 1.0 µg/L 1/22/2013 1:52:30 AM 1,1,2,2-Tetrachloroethane ND 2.0 μg/L 1 1/22/2013 1:52:30 AM Tetrachloroethene (PCE) ND 1.0 µg/L 1/22/2013 1:52:30 AM 1/22/2013 1:52:30 AM trans-1.2-DCE ND 1.0 µg/L 1/22/2013 1:52:30 AM trans-1,3-Dichloropropene ND 1.0 µq/L ND 1.0 1 1/22/2013 1:52:30 AM 1,2,3-Trichlorobenzene μg/L 1,2,4-Trichlorobenzene ND 1.0 μg/L 1/22/2013 1:52:30 AM ND 1.0 1/22/2013 1:52:30 AM 1,1,1-Trichloroethane μg/L ND 1/22/2013 1:52:30 AM 1,1,2-Trichloroethane 1.0 µg/L ND 1/22/2013 1:52:30 AM Trichloroethene (TCE) 1.0 μg/L ND µg/L 1/22/2013 1:52:30 AM 1.0 Trichlorofluoromethane 1,2,3-Trichloropropane ND 2.0 µg/L 1 1/22/2013 1:52:30 AM 1/22/2013 1:52:30 AM Vinyl chloride ND 1.0 µg/L ND 1.5 µg/L 1 1/22/2013 1:52:30 AM Xylenes, Total Surr: 1,2-Dichloroethane-d4 89.5 70-130 %REC 1 1/22/2013 1:52:30 AM 91.1 69.5-130 %REC 1 1/22/2013 1:52:30 AM Surr: 4-Bromofluorobenzene 70-130 Surr: Dibromofluoromethane 95.5 %REC 1 1/22/2013 1:52:30 AM 70-130 %REC 1/22/2013 1:52:30 AM Surr: Toluene-d8 92.0 Analyst: JML **EPA 120.1: SPECIFIC CONDUCTANCE** 1/21/2013 3:08:38 PM Conductivity 3900 0.010 µmhos/cm SM4500-H+B: PH Analyst: JML 1/21/2013 3:08:38 PM 7.33 1.68 pH units 1 Hg Analyst: JML SM2320B: ALKALINITY 1/21/2013 3:08:38 PM Bicarbonate (As CaCO3) 220 20 mg/L CaCO3 1 Carbonate (As CaCO3) ND 2.0 mg/L CaCO3 1 1/21/2013 3:08:38 PM 220 mg/L CaCO3 1/21/2013 3:08:38 PM Total Alkalinity (as CaCO3) 20 1 SM2540C MOD: TOTAL DISSOLVED SOLIDS Analyst: KS

200

mg/L

3340

Matrix: AQUEOUS

#### Qualifiers:

**Total Dissolved Solids** 

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike Recovery outside accepted recovery limits

1/23/2013

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** Project:

Lab ID: 1301596-004 Client Sample ID: GRW-6

Collection Date: 1/15/2013 2:50:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS					=finn-it	Analyst: JRR
Fluoride	0.66	0.50		mg/L	5	1/18/2013 6:10:46 PM
Chloride	100	2.5		mg/L	5	1/18/2013 6:10:46 PM
Bromide	ND.	0.50		mg/L	5	1/18/2013 6:10:46 PM
Sulfate	1500	25	•	mg/L	50	1/21/2013 11:06:53 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/18/2013 11:33:32 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Calcium	370	5.0		mg/L	5	1/22/2013 10:18:43 AM
Iron	2.4	0.10	•	mg/L	5	1/22/2013 10:18:43 AM
Magnesium	37	1.0		mg/L	1	1/22/2013 10:15:27 AM
Manganese	1.2	0.010	•	mg/L	5	1/22/2013 10:18:43 AM
Potassium	2.5	1.0		mg/L	1	1/22/2013 10:15:27 AM
Sodium	540	10		mg/L	10	1/22/2013 2 12 29 PM
EPA METHOD 8270C: PAHS						Analyst: JDC
Naphthalene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
1-Methylnaphthalene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
2-Methylnaphthalene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Acenaphthylene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Acenaphthene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Fluorene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Phenanthrene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Anthracene	ND	0.75		μg/L	1 =	1/23/2013 3:23:33 PM
Fluoranthene	ND	0.75		μg/L	1	1/23/2013 3:23:33 PM
Pyrene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Benz(a)anthracene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Chrysene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Benzo(b)fluoranthene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Benzo(k)fluoranthene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Benzo(a)pyrene	ND	0.50		μg/L	1	1/23/2013 3:23:33 PM
Dibenz(a,h)anthracene	ND	0.75		μg/L	1	1/23/2013 3:23:33 PM
Benzo(g,h,i)perylene	ND	0.75		μg/L	1	1/23/2013 3:23:33 PM
Indeno(1,2,3-cd)pyrene	ND	1.0		µg/L	1	1/23/2013 3:23:33 PM
Surr: Benzo(e)pyrene	71.2	38-145		%REC	1	1/23/2013 3:23:33 PM
Surr: N-hexadecane	68.6	40-107		%REC	1	1/23/2013 3:23:33 PM
EPA METHOD 8260B: VOLATILES						Analyst: RAA
Benzene	ND	1.0		µg/L	1	1/22/2013 2:20:25 AM
Toluene	ND	1.0		µg/L	1	1/22/2013 2:20:25 AM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2013 2:20:25 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		μg/L	1	1/22/2013 2:20:25 AM
1,2,4-Trimethylbenzene	ND	1.0		μg/L	1	1/22/2013 2:20:25 AM
1,3,5-Trimethylbenzene	ND	1.0		μg/L	1	1/22/2013 2:20:25 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 7 of 52

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Client Sample ID: GRW-6

Collection Date: 1/15/2013 2:50:00 PM Project: **GBR Annual Sampling** Lab ID: 1301596-004 Matrix: AQUEOUS Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	1/22/2013 2:20:25 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 2:20:25 AM
1-Methylnaphthalene	ND	4.0	µg/L	1	1/22/2013 2:20:25 AM
2-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 2:20:25 AM
Acetone	ND	10	μg/L	1	1/22/2013 2:20:25 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Bromodichloromethane	ND	1.0	µg/L	1	1/22/2013 2:20:25 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 2:20:25 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 2:20:25 AM
Carbon disulfide	ND	10	µg/L	1	1/22/2013 2:20:25 AM
Carbon Tetrachloride	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Chloroethane	ND	2.0	μg/L	. 1	1/22/2013 2:20:25 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 2:20:25 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
4-Chlorotoluene	ND	1.0	μg/L	-1	1/22/2013 2:20:25 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 2:20:25 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,3-Dichlorobenzene	ND	1.0	µg/L	- 1	1/22/2013 2:20:25 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 2:20:25 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 2:20:25 AM
Isopropylbenzene	ND	1.0	µg/L	1	1/22/2013 2;20:25 AM
4-Isopropyltoluene	ND	1.0	µg/L	1	1/22/2013 2:20:25 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 2:20:25 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 2:20:25 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 2:20:25 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits Page 8 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Lab ID: 1301596-004

Client Sample ID: GRW-6

Collection Date: 1/15/2013 2:50:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				- 1	Analyst: RAA
sec-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Styrene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
tert-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	1/22/2013 2 20 25 AM
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	1/22/2013 2:20:25 AM
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	1/22/2013 2 20 25 AM
trans-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 2 20 25 AM
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 2 20 25 AM
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2 20 25 AM
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,1,1-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Trichloroethene (TCE)	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Trichlorofluoromethane	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	1/22/2013 2:20:25 AM
Vinyl chloride	ND	1.0	μg/L	1	1/22/2013 2:20:25 AM
Xylenes, Total	ND	1.5	μg/L	1	1/22/2013 2:20:25 AM
Surr: 1,2-Dichloroethane-d4	88.1	70-130	%REC	1	1/22/2013 2:20:25 AM
Surr: 4-Bromofluorobenzene	91.6	69.5-130	%REC	1	1/22/2013 2:20:25 AM
Surr: Dibromofluoromethane	93.6	70-130	%REC	1	1/22/2013 2:20:25 AM
Surr: Toluene-d8	93.7	70-130	%REC	1	1/22/2013 2:20:25 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>					Analyst: JML
Conductivity	3500	0.010	µmhos/cm	1	1/21/2013 3:22:16 PM
SM4500-H+B: PH					Analyst: JML
pH	7.47	1.68	H pH units	1	1/21/2013 3:22:16 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	460	20	mg/L CaCO3	1	1/21/2013 3:22:16 PM
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3	1	1/21/2013 3:22:16 PM
Total Alkalinity (as CaCO3)	460	20	mg/L CaCO3	1	1/21/2013 3:22:16 PM
SM2540C MOD: TOTAL DISSOLVED SO	DLIDS				Analyst: KS
Total Dissolved Solids	2760	40.0	mg/L	1	1/23/2013

Matrix: AQUEOUS

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery little 9 of 52

# Hall Environmental Analysis Laboratory, Inc.

**Client Sample ID: GRW-3** 

Project: **GBR Annual Sampling** 

CLIENT: Western Refining Southwest, Inc.

Collection Date: 1/15/2013 3:33:00 PM

Lab ID: 1301596-005 Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS		<del></del>			Analyst: JRR
Fluoride	1.0	0.50	mg/L	5	1/18/2013 6:35:36 PM
Chloride	59	2.5	mg/L	5	1/18/2013 6:35:36 PM
Bromide	ND	0.50	mg/L	5	1/18/2013 6:35:36 PM
Sulfate	1300	25	* mg/L	50	1/21/2013 11:19:18 PM
Nitrate+Nitrite as N	ND	1.0	mg/L	5	1/19/2013 12:48:01 AM
EPA METHOD 200.7: METALS					Analyst: ELS
Calcium	190	5.0	mg/L	5	1/22/2013 10:25:40 AM
Iron	2.8	0.10	* mg/L	5	1/22/2013 10;25;40 AM
Magnesium	26	1.0	mg/L	1	1/22/2013 10:22:25 AM
Manganese	0.54	0.0020	* mg/L	1	1/22/2013 10:22:25 AM
Potassium	2.5	1.0	mg/L	1	1/22/2013 10:22:25 AM
Sodium	540	10	mg/L	10	1/22/2013 2:16:21 PM
EPA METHOD 8270C: PAHS					Analyst: JDC
Naphthalene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
1-Methylnaphthalene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
2-Methylnaphthalene	ND	0.50	μ <b>g/</b> L	1	1/23/2013 3:46:45 PM
Acenaphthylene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Acenaphthene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Fluorene	0.98	0.50	μg/L	1	1/23/2013 3:46:45 PM
Phenanthrene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Anthracene	ND	0.75	μg/L	1	1/23/2013 3:46:45 PM
Fluoranthene	ND	0.75	μg/L	1	1/23/2013 3:46:45 PM
Pyrene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Benz(a)anthracene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Chrysene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Benzo(b)fluoranthene	ND	0.50	μg/L	1	1/23/2013 3:46:45 PM
Benzo(k)fluoranthene	ND	0.50	μ <b>g/L</b>	1	1/23/2013 3 46 45 PM
Benzo(a)pyrene	ND	0.50	μ <b>g/L</b>	1	1/23/2013 3 46:45 PM
Dibenz(a,h)anthracene	ND	0.75	μg/L	1	1/23/2013 3 46:45 PM
Benzo(g,h,i)perylene	ND	0.75	µg/L	1	1/23/2013 3:46:45 PM
Indeno(1,2,3-cd)pyrene	ND	1.0	μg/L	1	1/23/2013 3:46:45 PM
Surr: Benzo(e)pyrene	69.2	38-145	%REC	1	1/23/2013 3:46:45 PM
Surr; N-hexadecane	70.6	40-107	%REC	1	1/23/2013 3:46:45 PM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Toluene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Ethylbenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1 //	1/22/2013 2:48:28 AM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	1/22/2013 2:48:28 AM

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pll greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 10 of 52

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** Lab ID:

1301596-005

**Client Sample ID: GRW-3** 

Collection Date: 1/15/2013 3:33:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				111	Analyst: RAA
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 2:48:28 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 2:48:28 AM
2-Methylnaphthalene	ND	4.0	µg/L	1	1/22/2013 2 48 28 AM
Acetone	ND	10	µg/L	1	1/22/2013 2:48:28 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 2:48:28 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 2:48:28 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 2:48:28 AM
Carbon Tetrachloride	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 2:48:28 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Chloromethane	ND	3.0	µg/L	1	1/22/2013 2:48:28 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 2:48:28 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 2 48 28 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 2:48:28 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 2:48:28 AM
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 2:48:28 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 2:48:28 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 2:48 28 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 2:48:28 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 2 48 28 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- P Sample pH greater than 2
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 11 of 52

# **Analytical Report** Lab Order 1301596 Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

**Client Sample ID: GRW-3** 

CLIENT: Western Refining Southwest, Inc. **GBR Annual Sampling Project:** 

Collection Date: 1/15/2013 3:33:00 PM

1301596-005 Lab ID:

Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Q	Qual Ur	nits	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: RAA
sec-Butylbenzene	ND	1.0	þi	g/L	1	1/22/2013 2:48:28 AM
Styrene	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
tert-Butylbenzene	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
1,1,1,2-Tetrachloroethane	ND	1.0	þ	g/L	1	1/22/2013 2:48:28 AM
1,1,2,2-Tetrachloroethane	ND	2.0	μ	g/L	1	1/22/2013 2:48:28 AM
Tetrachloroethene (PCE)	ND	1.0	þ	g/L	1	1/22/2013 2:48:28 AM
trans-1,2-DCE	ND	1.0	þ	g/L	1	1/22/2013 2:48:28 AM
trans-1,3-Dichloropropene	ND	1.0	þ	g/L	1	1/22/2013 2:48:28 AM
1,2,3-Trichlorobenzene	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
1,2,4-Trichlorobenzene	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
1,1,1-Trichloroethane	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
1,1,2-Trichloroethane	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
Trichloroethene (TCE)	ND	1.0	μ	g/l.	1	1/22/2013 2:48:28 AM
Trichlorofluoromethane	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
1,2,3-Trichloropropane	ND	2.0	μ	g/L	1	1/22/2013 2:48:28 AM
Vinyl chloride	ND	1.0	μ	g/L	1	1/22/2013 2:48:28 AM
Xylenes, Total	ND	1.5		g/L	1	1/22/2013 2:48:28 AM
Surr: 1,2-Dichloroethane-d4	88.3	70-130	%	&REC	1	1/22/2013 2:48:28 AM
Surr: 4-Bromofluorobenzene	90.6	69.5-130		REC	1	1/22/2013 2 48 28 AM
Surr: Dibromofluoromethane	97.2	70-130		&REC	1	1/22/2013 2 48 28 AM
Surr: Toluene-d8	91.8	70-130	%	LREC .	1	1/22/2013 2:48:28 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	3200	0.010	μ	mhos/cm	1	1/22/2013 12:18:55 PM
SM4500-H+B: PH						Analyst: JML
pH	7.26	1.68	Н р	H units	1	1/22/2013 12:18:55 PM
SM2320B: ALKALINITY		9				Analyst: JML
Bicarbonate (As CaCO3)	600	20	n	ng/L CaCO3	:1	1/22/2013 12:18:55 PM
Carbonate (As CaCO3)	ND	2.0	n	ng/L CaCO3	1	1/22/2013 12:18:55 PM
Total Alkalinity (as CaCO3)	600	20	π	ng/L CaCO3	1	1/22/2013 12:18:55 PN
SM2540C MOD: TOTAL DISSOLVED S	OLIDS					Analyst: KS
Total Dissolved Solids	2620	40.0	п	ng/L	1	1/23/2013

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- 11 Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 12 of 52

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Lab ID: 1301596-006

**Client Sample ID: GBR-51** 

Collection Date: 1/16/2013 11:35:00 AM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS		-		A Isom	Analyst: JRR
Fluoride	0.74	0.10	mg/L	1	1/18/2013 7:25:18 PM
Chloride	56	10	mg/L	20	1/18/2013 7:37:43 PM
Bromide	0.30	0.10	mg/L	1	1/18/2013 7:25:18 PM
Sulfate	1500	25	• mg/L	50	1/21/2013 11:31:42 PM
Nitrate+Nitrite as N	5.6	2.0	mg/L	10	1/22/2013 1:48:12 AM
<b>EPA METHOD 200.7: METALS</b>					Analyst: ELS
Calcium	420	5.0	mg/L	5	1/22/2013 10:33:02 AM
Iron	9.7	0.40	* mg/L	20	1/22/2013 2:34:13 PM
Magnesium	35	1.0	mg/L	1	1/22/2013 10:29:35 AM
Manganese	0.88	0.0020	* mg/L	1	1/22/2013 10:29:35 AM
Potassium	3.2	1.0	mg/L	1	1/22/2013 10:29:35 AM
Sodium	330	5.0	mg/L	5	1/22/2013 10:33:02 AM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	1.0	−µg/L	1	1/22/2013 3:16:48 AM
Toluene	_ ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Ethylbenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 3:16:48 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 3:16:48 AM
2-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 3:16:48 AM
Acetone	ND	10	μg/L	1	1/22/2013 3:16:48 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 3:16:48 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 3:16:48 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 3:16:48 AM
Carbon Tetrachloride	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 3:16:48 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 3:16:48 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 3:16:48 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery littils 13 of 52

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-51

Project: **GBR Annual Sampling**  Collection Date: 1/16/2013 11:35:00 AM

1301596-006 Lab ID:

Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Dibromochloromethane	ND	1.0	μ <b>g/</b> L	1	1/22/2013 3;16:48 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,3-Dichlorobenzene	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Dichlorodifluoromethane	ND	1.0	μg/Ļ	1	1/22/2013 3:16:48 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 3:16:48 AM
1,1-Dichloropropene	ND	1.0	μ <b>g/L</b>	1	1/22/2013 3:16:48 AM
Hexachlorobutadiene	ND	1.0	μ <b>g/L</b>	1	1/22/2013 3:16:48 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 3:16:48 AM
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
4-Isopropyltoluene	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 3:16:48 AM
Methylene Chloride	ND	3.0	μg/L	.1	1/22/2013 3:16:48 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 3:16:48 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
sec-Butylbenzene	ND	1.0	μg/L	-1	1/22/2013 3:16:48 AM
Styrene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
tert-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,1,1,2-Tetrachloroethane	ND	1,0	μg/L	-1	1/22/2013 3:16:48 AM
1,1,2,2-Tetrachloroethane	ND	2,0	µg/L	1	1/22/2013 3:16:48 AM
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
trans-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2,4-Trichlorobenzene	NĐ	1.0	μg/L	1	1/22/2013 3 16 48 AM
1,1,1-Trichloroethane	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
1,1,2-Trichloroethane	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
Trichloroethene (TCE)	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
Trichlorofluoromethane	ND	1.0	μg/L	1	1/22/2013 3:16:48 AM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	1/22/2013 3:16:48 AM
Vinyl chloride	ND	1.0	µg/L	1	1/22/2013 3:16:48 AM
Xylenes, Total	ND	1.5	μg/L	1	1/22/2013 3:16:48 AM
Surr: 1,2-Dichloroethane-d4	87.8	70-130	%REC	1	1/22/2013 3:16:48 AM
Surr: 4-Bromofluorobenzene	94.5	69.5-130	%REC	1	1/22/2013 3:16:48 AM
Surr: Dibromofluoromethane	97.9	70-130	%REC	1	1/22/2013 3:16:48 AM
Surr: Toluene-d8	91.9	70-130	%REC	1	1/22/2013 3:16:48 AM

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range Е
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 14 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**Project: GBR Annual Sampling** 

Lab ID: 1301596-006 Client Sample ID: GBR-51

Matrix: AQUEOUS

Collection Date: 1/16/2013 11:35:00 AM Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed
EPA 120.1: SPECIFIC CONDUCTANCE				107	Analyst: JML
Conductivity	2900	0.010	µmhos/cm	1	1/22/2013 12:44:58 PM
SM4500-H+B: PH					Analyst: JML
pΗ	7.27	1.68 H	pH units	1	1/22/2013 12:44:58 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	210	20	mg/L CaCO3	1	1/22/2013 12:44:58 PM
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3	1	1/22/2013 12:44:58 PM
Total Alkalinity (as CaCO3)	210	20	mg/L CaCO3	1	1/22/2013 12:44:58 PM
SM2540C MOD: TOTAL DISSOLVED SO	LIDS				Analyst: KS
Total Dissolved Solids	2540	40.0	mg/L	1	1/23/2013

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pl1 greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 15 of 52

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** 

Lab ID: 1301596-007 Client Sample ID: GBR-52

Collection Date: 1/16/2013 1:00:00 PM Received Date: 1/18/2013 9:53:00 AM

Result **RL Qual Units** DF Date Analyzed Analyses Analyst: JRR **EPA METHOD 300.0: ANIONS** 0.80 0.10 mg/L 1 1/18/2013 7:50:08 PM Fluoride 20 1/18/2013 8:02:33 PM Chloride 63 10 mg/L 1/18/2013 7:50:08 PM Bromide 0.38 0.10 mg/L 1 50 1/21/2013 11:44:06 PM 1700 25 Sulfate mg/L Nitrate+Nitrite as N 5.3 2.0 mg/L 10 1/22/2013 2:00:37 AM **EPA METHOD 200.7: METALS** Analyst: ELS 5 1/22/2013 10:41:35 AM Calcium 470 5.0 mg/L 1/22/2013 10:41:35 AM 2.3 0.10 ma/L 5 Iron 1/22/2013 10:37:52 AM 1 Magnesium 36 1.0 mg/L Manganese 0.036 0.0020 mg/L 1 1/22/2013 10:37:52 AM Potassium 2.2 1.0 mg/L 1 1/22/2013 10:37:52 AM 350 5.0 mg/L 5 1/22/2013 10:41:35 AM Sodium **EPA METHOD 8260B: VOLATILES** Analyst: RAA 1/22/2013 3:44:31 AM ND 1.0 1 Benzene µg/L 1.0 1 1/22/2013 3:44:31 AM Toluene ND µg/L ND 1 1/22/2013 3:44:31 AM Ethylbenzene 1.0 μg/L Methyl tert-butyl ether (MTBE) ND 1.0 µg/L 1 1/22/2013 3:44:31 AM ND 1.0 μg/L 1/22/2013 3:44:31 AM 1,2,4-Trimethylbenzene ND 1/22/2013 3:44:31 AM 1,3,5-Trimethylbenzene 1.0 μg/L 1 ND 1.0 μg/L 1/22/2013 3:44:31 AM 1,2-Dichloroethane (EDC) ND 1.0 μg/L 1/22/2013 3:44:31 AM 1,2-Dibromoethane (EDB) ND 2.0 1/22/2013 3:44:31 AM Naphthalene μg/L 1 4.0 1/22/2013 3:44:31 AM 1-Methylnaphthalene ND μg/L 4.0 1/22/2013 3:44:31 AM ND 1 2-Methylnaphthalene μg/L 1/22/2013 3:44:31 AM ND 10 µg/L 1 Acetone 1/22/2013 3:44:31 AM ND 1.0 μg/L Bromobenzene 1/22/2013 3:44:31 AM **Bromodichloromethane** ND 1.0 µg/L Bromoform ND 1.0 μg/L 1/22/2013 3:44:31 AM **Bromomethane** ND 3.0 µg/L 1 1/22/2013 3:44:31 AM 2-Butanone ND 10 µg/L 1 1/22/2013 3:44:31 AM Carbon disulfide ND 10 µg/L 1/22/2013 3:44:31 AM ND 1.0 1/22/2013 3:44:31 AM μg/L 1 Carbon Tetrachloride ND 1.0 μg/L 1 1/22/2013 3:44:31 AM Chlorobenzene ND 2.0 μg/L 1 1/22/2013 3:44:31 AM Chloroethane ND 1/22/2013 3:44:31 AM 1.0 μg/L 1 Chloroform ND 3.0 1 1/22/2013 3:44:31 AM Chloromethane μg/L ND 1 1/22/2013 3:44:31 AM 1.0 µg/L 2-Chlorotoluene 4-Chlorotoluene ND 1.0 µg/L 1/22/2013 3:44:31 AM 1/22/2013 3:44:31 AM cis-1,2-DCE ND 1.0 µg/L ND 1/22/2013 3:44:31 AM cis-1,3-Dichloropropene 1.0 µg/L 1,2-Dibromo-3-chloropropane ND 2.0 µg/L 1/22/2013 3:44:31 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- 1 Analyte detected below quantitation limits
- P Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** 

Lab ID: 1301596-007

Project:

Client Sample ID: GBR-52

Collection Date: 1/16/2013 1:00:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual Uni	its DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst; RAA
Dibromochloromethane	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
Dibromomethane	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
1,2-Dichlorobenzene	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
1,3-Dichlorobenzene	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
1,4-Dichlorobenzene	ND	1.0			1/22/2013 3:44:31 AM
Dichlorodifluoromethane	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
1,1-Dichloroethane	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
1,1-Dichloroethene	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
1,2-Dichloropropane	ND	1.0	μд/	L 1	1/22/2013 3:44:31 AM
1,3-Dichloropropane	ND	1.0	μд/	L 1	1/22/2013 3:44:31 AM
2,2-Dichloropropane	ND	2.0	μд/	L 1	1/22/2013 3:44:31 AM
1,1-Dichloropropene	ND	1.0	рд/	L 1	1/22/2013 3:44:31 AM
Hexachlorobutadiene	ND	1.0			1/22/2013 3:44:31 AM
2-Hexanone	ND	10	μg/	L 1	1/22/2013 3:44:31 AM
Isopropylbenzene	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
4-Isopropyltoluene	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
4-Methyl-2-pentanone	ND	10	μg/	L 1	1/22/2013 3:44:31 AM
Methylene Chloride	ND	3.0	µg/	L 1	1/22/2013 3:44:31 AM
n-Butylbenzene	ND	3.0	μg/	L 1	1/22/2013 3:44 31 AM
n-Propylbenzene	ND	1.0	μg/	և 1	1/22/2013 3:44:31 AM
sec-Butylbenzene	ND	1.0	µg/	ե 1	1/22/2013 3:44:31 AM
Styrene	ND	1.0	µg/		1/22/2013 3:44:31 AM
tert-Butylbenzene	DN	1.0	рд/	L 1	1/22/2013 3:44:31 AM
1,1,1,2-Tetrachloroethane	ND	1.0			1/22/2013 3:44:31 AM
1,1,2,2-Tetrachloroethane	ND	2.0	µg/	L 1	1/22/2013 3:44:31 AM
Tetrachloroethene (PCE)	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
trans-1,2-DCE	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
trans-1,3-Dichloropropene	ND	1.0	μg/	L 1	1/22/2013 3 44 31 AM
1,2,3-Trichlorobenzene	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
1,2,4-Trichlorobenzene	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
1,1,1-Trichloroethane	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
1,1,2-Trichloroethane	ND	1.0	-		1/22/2013 3:44:31 AM
Trichloroethene (TCE)	ND	1.0	µg/		1/22/2013 3:44:31 AM
Trichlorofluoromethane	ND	1.0	µg/	L 1	1/22/2013 3:44:31 AM
1,2,3-Trichloropropane	ND	2.0	μg/	L 1	1/22/2013 3:44:31 AM
Vinyl chloride	ND	1.0	μg/	L 1	1/22/2013 3:44:31 AM
Xylenes, Total	ND	1.5	μg/		1/22/2013 3:44:31 AM
Surr: 1,2-Dichloroethane-d4	89.0	70-130	. •	REC 1	1/22/2013 3:44:31 AM
Surr: 4-Bromofluorobenzene	92.6	69.5-130		EC 1	1/22/2013 3:44:31 AM
Surr: Dibromofluoromethane	95.7	70-130	%R	REC 1	1/22/2013 3:44:31 AM
Surr: Toluene-d8	92.5	70-130	%R		1/22/2013 3:44:31 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level,
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RLReporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 17 of 52

#### Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

Lab ID: 1301596-007 **Client Sample ID: GBR-52** 

Collection Date: 1/16/2013 1:00:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed
EPA 120.1: SPECIFIC CONDUCTAL	NCE				•	Analyst: JML
Conductivity	3100	0.010		µmhos/cm	1	1/22/2013 12:58:10 PM
SM4500-H+B: PH						Analyst: JML
pH	7.38	1.68	Н	pH units	1	1/22/2013 12:58:10 PM
SM2320B: ALKALINITY						Analyst: JML
Bicarbonate (As CaCO3)	200	20		mg/L CaCO3	1	1/22/2013 12:58:10 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	1/22/2013 12:58:10 PM
Total Alkalinity (as CaCO3)	200	20		mg/L CaCO3	1	1/22/2013 12:58:10 PM
SM2540C MOD: TOTAL DISSOLVE	D SOLIDS					Analyst: KS
Total Dissolved Solids	2770	40.0		mg/L	1	1/23/2013

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range E
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 18 of 52

# Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling Project:** 

Lab ID: 1301596-008 Client Sample ID: GBR-50

Collection Date: 1/16/2013 2:05:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS				11.84	Analyst: JRR
Fluoride	0.61	0.10	mg/L	1	1/18/2013 8:14:58 PM
Chloride	49	10	mg/L	20	1/18/2013 8:27:23 PM
Bromide	0.26	0.10	mg/L	1	1/18/2013 8:14:58 PM
Sulfate	1600	25	* mg/L	50	1/21/2013 11:56:31 PM
Nitrate+Nitrite as N	3.4	1.0	mg/L	5	1/19/2013 1:25:15 AM
EPA METHOD 200.7: METALS					Analyst: ELS
Barium	0.016	0.0020	mg/L	1	1/22/2013 11:02:05 AM
Beryllium	ND	0.0020	mg/L	1	1/22/2013 11:02:05 AM
Cadmium	ND	0.0020	mg/L	1	1/22/2013 11:02:05 AM
Calcium	440	5.0	mg/L	5	1/22/2013 11:06:01 AM
Chromium	ND	0.0060	mg/L	1	1/22/2013 11:02:05 AM
Iron	1.3	0.10	* mg/L	5	1/22/2013 11:06:01 AM
Magnesium	33	1.0	mg/L	1	1/22/2013 11:02:05 AM
Manganese	0.12	0.0020	* mg/L	1	1/22/2013 11:02:05 AM
Nickel	ND	0.010	mg/L	1	1/22/2013 11:02:05 AM
Potassium	3.0	1.0	mg/L	1	1/22/2013 11:02:05 AM
Silver	ND	0.0050	mg/L	1	1/22/2013 11:02:05 AM
Sodium	410	5.0	mg/L	5	1/22/2013 11:06:01 AM
Zinc	0.015	0.010	mg/L	1	1/22/2013 11:02:05 AM
EPA 200.8: METALS					Analyst: DBD
Antimony	ND	0.0025	mg/L	2.5	1/24/2013 10:45:36 AM
Arsenic	ND	0.0025	mg/L	2.5	1/24/2013 10:45:36 AM
Lead	ND	0.0025	mg/L	2.5	1/24/2013 10:45:36 AM
Copper	0.0054	0.0025	mg/L	2.5	1/24/2013 10:45:36 AM
Selenium	0.010	0.0025	mg/L	2.5	1/24/2013 10:45:36 AM
Thallium	ND	0.0025	mg/L	2.5	1/24/2013 10:45:36 AM
EPA METHOD 245.1: MERCURY					Analyst: TMG
Mercury	ND	0.00020	mg/L	1	1/22/2013 12:14:07 PM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
Toluene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Ethylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 4:12:18 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 4:12:18 AM
2-Methylnaphthalene	ND	4.0	μ <b>g/L</b>	1	1/22/2013 4:12:18 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 19 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

Lab ID: 1301596-008 Client Sample ID: GBR-50

Collection Date: 1/16/2013 2:05:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				N.	Analyst: RAA
Acetone	ND	10	µg/L	1	1/22/2013 4:12:18 AM
Bromobenzene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Bromodichloromethane	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Bromoform	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Bromomethane	ND	3,0	µg/L	1	1/22/2013 4:12:18 AM
2-Butanone	ND	10	µg/L	1	1/22/2013 4:12:18 AM
Carbon disulfide	ND	10	µg/L	1	1/22/2013 4:12:18 AM
Carbon Tetrachloride	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Chlorobenzene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 4:12:18 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
Chloromethane	ND	3.0	µg/L	1	1/22/2013 4:12:18 AM
2-Chlorotoluene	ND	1.0	μg/L	ï	1/22/2013 4:12:18 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 4:12:18 AN
Dibromochloromethane	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
1,3-Dichlorobenzene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AN
1,4-Dichlorobenzene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AN
Dichlorodifluoromethane	ND	1.0	µg/L		1/22/2013 4:12:18 AN
1,1-Dichloroethane	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
2,2-Dichloropropane	ND	2.0	μg/L	- 1	1/22/2013 4:12:18 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
2-Hexanone	ND	10	µg/L	1	1/22/2013 4:12:18 AN
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
4-Isopropyltoluene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AN
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 4:12:18 AN
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 4:12:18 AM
n-Butylbenzene	ND	3.0	µg/L	1	1/22/2013 4:12:18 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
sec-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AN
Styrene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
tert-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	1/22/2013 4:12:18 AN

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

1301596-008 Lab ID:

Client Sample ID: GBR-50

Collection Date: 1/16/2013 2:05:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
trans-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
1,2,3-Trichtorobenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,1,1-Trichloroethane	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
Trichloroethene (TCE)	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
Trichlorofluoromethane	ND	1.0	μg/L	1	1/22/2013 4:12:18 AM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	1/22/2013 4:12:18 AM
Vinyl chloride	ND	1.0	µg/L	1	1/22/2013 4:12:18 AM
Xylenes, Total	ND	1.5	μg/L	1	1/22/2013 4:12:18 AM
Surr: 1,2-Dichloroethane-d4	85.6	70-130	%REC	1	1/22/2013 4:12:18 AM
Surr: 4-Bromofluorobenzene	93.5	69.5-130	%REC	1	1/22/2013 4:12:18 AM
Surr: Dibromofluoromethane	94.5	70-130	%REC	1	1/22/2013 4:12:18 AM
Surr: Toluene-d8	93.7	70-130	%REC	1	1/22/2013 4:12:18 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>					Analyst: JML
Conductivity	3200	0.010	µmhos	/cm 1	1/22/2013 1:12:02 PM
SM4500-H+B: PH					Analyst: JML
рН	7,24	1.68	H pH unit	ts 1	1/22/2013 1:12:02 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	200	20	mg/L C	aCO3 1	1/22/2013 1:12:02 PM
Carbonate (As CaCO3)	ND	2.0	mg/L C	aCO3 1	1/22/2013 1:12:02 PM
Total Alkalinity (as CaCO3)	200	20	mg/L C	CaCO3 1	1/22/2013 1:12:02 PM
SM2540C MOD: TOTAL DISSOLVED S	DLIDS				Analyst: KS
Total Dissolved Solids	2830	40.0	mg/L	- 1	1/23/2013

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- p Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 21 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** Project:

1301596-009 Lab ID:

Client Sample ID: GBR-48

Collection Date: 1/16/2013 2:35:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JRR
Fluoride	0.61	0.10		mg/L	1	1/18/2013 8:39:48 PM
Chloride	230	10		mg/L	20	1/18/2013 8:52:13 PM
Bromide	0.81	0.10		mg/L	1	1/18/2013 8:39:48 PM
Sulfate	2200	50	•	mg/L	100	1/22/2013 12:08:55 AM
Nitrate+Nitrite as N	6.9	2.0		mg/L	10	1/22/2013 2:13:02 AM
EPA METHOD 200.7: METALS						Analyst: ELS
Barium	0.072	0.0020		mg/L	1	1/22/2013 11:09:55 AM
Beryllium	ND	0.0020		mg/L	1	1/22/2013 11:09:55 AM
Cadmium	ND	0.0020		mg/L	1	1/22/2013 11:09:55 AM
Calcium	480	5.0		mg/L	5	1/22/2013 11:13:22 AM
Chromium	0,52	0.0060	•	mg/L	1	1/22/2013 11:09:55 AM
Iron	17	0.40	•	mg/L	20	1/22/2013 2:38:05 PM
Magnesium	48	1,0		mg/L	1	1/22/2013 11:09:55 AM
Manganese	0.94	0.0020		mg/L	1	1/22/2013 11:09:55 AM
Nickel	0.041	0.010		mg/L	1	1/22/2013 11:09:55 AM
Potassium	7.0	1.0		mg/L	1	1/22/2013 11:09:55 AM
Silver	ND	0.0050		mg/L	1	1/22/2013 11:09:55 AM
Sodium	730	20		mg/L	20	1/22/2013 2:38:05 PM
Zinc	0.034	0.010		mg/L	1	1/22/2013 11:09:55 AM
EPA 200.8: METALS						Analyst: DBD
Antimony	ND	0,0025		mg/L	2,5	1/24/2013 10:49:32 AM
Arsenic	0.0052	0.0025		mg/L	2,5	1/24/2013 10 49 32 AM
Lead	0.0080	0.0025		mg/L	2,5	1/24/2013 10:49:32 AM
Copper	0.022	0.0025		mg/L	2,5	1/24/2013 10:49:32 AM
Selenium	0.19	0.0050	•	mg/L	5	1/24/2013 11:21:03 AM
Thallium	ND	0,0025		mg/L	2.5	1/24/2013 10:49:32 AM
EPA METHOD 245.1; MERCURY						Analyst: TMG
Mercury	ND	0.00020		mg/L	1	1/22/2013 12:15:54 PM
EPA METHOD 8260B: VOLATILES						Analyst: RAA
Benzene	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
Toluene	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
Ethylbenzene	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
1,2,4-Trimethylbenzene	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
1,3,5-Trimethylbenzene	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
1,2-Dichloroethane (EDC)	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
1,2-Dibromoethane (EDB)	ND	1.0		μg/L	1	1/22/2013 5:35:58 AM
Naphthalene	ND	2,0		μg/L	1	1/22/2013 5:35:58 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2013 5:35:58 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2013 5:35:58 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- $\mathbf{H}$ Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 22 of 52

#### Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Lab ID: 1301596-009

**Client Sample ID: GBR-48** 

Collection Date: 1/16/2013 2:35:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				ain.	Analyst: RAA
Acetone	ND	10	μg/L	1	1/22/2013 5:35:58 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 5:35:58 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 5:35:58 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 5:35:58 AM
Carbon Tetrachloride	ND	1.0	µg/L	1	1/22/2013 5:35:58 AM
Chlorobenzene	ND	1.0	µg/L	1	1/22/2013 5:35:58 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 5:35:58 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 5 35 58 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
4-Chlorotoluene	ND	1.0	μg/L	1 =	1/22/2013 5:35:58 AM
cis-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 5 35 58 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 5 35 58 AM
1,2-Dibromo-3-chloropropane	NĐ	2.0	μg/L	1	1/22/2013 5 35 58 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 5 35 58 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 5 35 58 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 5 35 58 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 5:35 58 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 5.35.58 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 5:35 58 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 5:35:58 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 5:35 58 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 5:35:58 AM
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
4-Isopropyltoluene	ND	1.0	µg/L	1	1/22/2013 5:35:58 AM
4-Methyl-2-pentanone	ND	10	µg/L	1	1/22/2013 5:35:58 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 5:35:58 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 5:35:58 AM
n-Propylbenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
sec-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Styrene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
tert-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	1/22/2013 5:35:58 AM

Matrix: AQUEOUS

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery litting 23 of 52

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: GBR-48

Project: **GBR** Annual Sampling

CLIENT: Western Refining Southwest, Inc.

Collection Date: 1/16/2013 2:35:00 PM

Lab ID: 1301596-009

Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Tetrachloroethene (PCE)	1.0	1.0	µg/L	1	1/22/2013 5:35:58 AM
trans-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,1,1-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Trichloroethene (TCE)	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Trichlorofluoromethane	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	1/22/2013 5:35:58 AM
Vinyl chloride	ND	1.0	μg/L	1	1/22/2013 5:35:58 AM
Xylenes, Total	ND	1.5	μg/L	1	1/22/2013 5:35:58 AM
Surr: 1,2-Dichloroethane-d4	88.7	70-130	%REC	1	1/22/2013 5:35:58 AM
Surr: 4-Bromofluorobenzene	88.0	69.5-130	%REC	1	1/22/2013 5:35:58 AM
Surr: Dibromofluoromethane	95.0	70-130	%REC	1	1/22/2013 5:35:58 AM
Surr: Toluene-d8	91.7	70-130	%REC	1	1/22/2013 5:35:58 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>					Analyst: JML
Conductivity	4700	0.010	µmhos/cm	1	1/22/2013 1:25:38 PM
SM4500-H+B: PH					Analyst: JML
рН	7.29	1.68 H	pH units	1	1/22/2013 1:25:38 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	240	20	mg/L CaCO3	1	1/22/2013 1:25:38 PM
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3	1	1/22/2013 1:25:38 PM
Total Alkalinity (as CaCO3)	240	20	mg/L CaCO3	1	1/22/2013 1:25:38 PM
SM2540C MOD: TOTAL DISSOLVED SC	LIDS				Analyst: KS
Total Dissolved Solids	4020	100	mg/L	1	1/23/2013

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - RPD outside accepted recovery limits R
  - Spike Recovery outside accepted recovery limits 24 of 52

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Lab ID: 1301596-010

Client Sample ID: GBR-32

Collection Date: 1/16/2013 3:20:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS	-				Analyst: JRR
Fluoride	0.56	0.10	mg/L	1	1/18/2013 9:04:37 PM
Chloride	400	50	* mg/L	100	1/22/2013 12:21:20 AM
Bromide	1.5	0.10	mg/L	1	1/18/2013 9:04:37 PM
Sulfate	2200	50	* mg/L	100	1/22/2013 12 21 20 AM
Nitrate+Nitrite as N	5.9	2.0	mg/L	10	1/22/2013 2 25 27 AM
EPA METHOD 200.7: METALS					Analyst: ELS
Barium	0.020	0.0020	mg/L	1	1/22/2013 11:16:30 AM
Beryllium	ND	0.0020	mg/L	1	1/22/2013 11:16:30 AM
Cadmium	ND	0.0020	mg/L	1	1/22/2013 11:16:30 AM
Całcium	610	10	mg/L	10	1/22/2013 2:41:57 PM
Chromium	0.098	0.0060	mg/L	1	1/22/2013 11:16:30 AM
Iron	1.2	0.10	* mg/L	5	1/22/2013 11:20:28 AM
Magnesium	60	1.0	mg/L	1	1/22/2013 11:16:30 AM
Manganese	0.40	0.0020	* mg/L	1	1/22/2013 11:16:30 AM
Nickel	0.084	0.010	mg/L	1	1/22/2013 11:16:30 AM
Potassium	5.1	1.0	mg/L	1	1/22/2013 11:16:30 AM
Silver	ND	0.0050	mg/L	1	1/22/2013 11:16:30 AM
Sodium	760	10	mg/L	10	1/22/2013 2:41:57 PM
Zinc	0.021	0.010	mg/L	1	1/22/2013 11:16:30 AM
EPA 200.8: METALS					Analyst: DBD
Antimony	ND	0.0025	mg/L	2.5	1/24/2013 10:53:28 AM
Arsenic	ND	0.0025	mg/L	2.5	1/24/2013 10:53:28 AM
Lead	ND	0.0025	mg/L	2.5	1/24/2013 10:53 28 AM
Copper	0.014	0.0025	mg/L	2.5	1/24/2013 10:53:28 AM
Selenium	0.046	0.0025	mg/L	2.5	1/24/2013 10:53:28 AM
Thallium	ND	0.0025	mg/L	2.5	1/24/2013 10:53 28 AM
EPA METHOD 245.1: MERCURY					Analyst: TMG
Mercury	ND	0.00020	mg/L	1	1/22/2013 12:17:39 PM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Toluene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Ethylbenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 6:04:11 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 6:04:11 AM
2-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 6:04:11 AM

Matrix: AQUEOUS

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 25 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

Lab ID: 1301596-010 Client Sample ID: GBR-32

Collection Date: 1/16/2013 3:20:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Acetone	ND	10	μg/L	1	1/22/2013 6:04:11 AM
Bromobenzene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 6:04:11 AM
2-Butanone	ND	10	µg/L	1	1/22/2013 6:04:11 AM
Carbon disulfide	ND	10	µg/L	1	1/22/2013 6:04:11 AM
Carbon Tetrachloride	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 6:04:11 AM
Chloroform	ND	1,0	μg/L	1	1/22/2013 6:04:11 AM
Chloromethane	ND	3.0	µg/L	1.	1/22/2013 6:04:11 AM
2-Chlorotoluene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AM
4-Chlorotoluene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AM
cis-1,2-DCE	ND	1.0	µg/L	1	1/22/2013 6:04:11 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	1/22/2013 6:04:11 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 6:04:11 AM
1,1-Dichloropropene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 6:04:11 AM
Isopropylbenzene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 6:04:11 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 6:04:11 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 6:04:11 AN
n-Propylbenzene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AN
sec-Butylbenzene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AN
Styrene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AN
tert-Butylbenzene	ND	1.0	µg/L	1	1/22/2013 6:04:11 AN
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AN
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	1/22/2013 6:04:11 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 26 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

**Lab ID:** 1301596-010

**Client Sample ID: GBR-32** 

Collection Date: 1/16/2013 3:20:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				/60	Analyst: RAA
Tetrachloroethene (PCE)	1.2	1.0	μg/L	1	1/22/2013 6:04:11 AM
trans-1,2-DCE	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,1,1-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Trichloroethene (TCE)	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Trichlorofluoromethane	NĐ	1.0	µg/L	1	1/22/2013 6:04:11 AM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	1/22/2013 6:04:11 AM
Vinyl chloride	ND	1.0	μg/L	1	1/22/2013 6:04:11 AM
Xylenes, Total	ND	1.5	µg/L	1	1/22/2013 6:04:11 AM
Surr: 1,2-Dichloroethane-d4	85.5	70-130	%REC	1	1/22/2013 6:04:11 AM
Surr: 4-Bromofluorobenzene	91.6	69.5-130	%REC	1	1/22/2013 6:04:11 AM
Surr: Dibromofluoromethane	95.7	70-130	%REC	1	1/22/2013 6:04:11 AM
Surr: Toluene-d8	93.5	70-130	%REC	1	1/22/2013 6:04:11 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCI</b>	<b>E</b>				Analyst: JML
Conductivity	5200	0.010	µmhos/cm	1	1/22/2013 1:40:10 PM
SM4500-H+B: PH					Analyst: JML
Hq	7.19	1.68	H pH units	1	1/22/2013 1:40:10 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	280	20	mg/L CaCO3	1	1/22/2013 1:40:10 PM
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3		1/22/2013 1:40:10 PM
Total Alkalinity (as CaCO3)	280	20	mg/L CaCO3	3 1	1/22/2013 1:40:10 PM
SM2540C MOD: TOTAL DISSOLVED S	SOLIDS				Analyst: KS
Total Dissolved Solids	4320	100	mg/L	1	1/23/2013

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 27 of 52

Lab Order 1301596

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-49

Project: **GBR Annual Sampling** 1301596-011

Lab ID:

Matrix: AQUEOUS

Collection Date: 1/16/2013 3:51:00 PM Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JRR
Fluoride	0.54	0.10		mg/L	1	1/18/2013 9:54:15 PM
Chloride	240	10		mg/L	20	1/18/2013 10:06:39 PM
Bromide	0.76	0.10		mg/L	1	1/18/2013 9:54:15 PM
Sulfate	1600	50	*	mg/L	100	1/22/2013 12:33:44 AM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/19/2013 2:02:28 AM
EPA METHOD 200.7: METALS						Analyst: ELS
Barium	0.019	0.0020	)	mg/L	1	1/22/2013 11:24:18 AM
Beryllium	ND	0.0020	)	mg/L	1	1/22/2013 11:24:18 AM
Cadmium	ND	0.0020	)	mg/L	1	1/22/2013 11:24:18 AM
Calcium	540	10	)	mg/L	10	1/22/2013 2:45:46 PM
Chromium	0.041	0.0060	}	mg/L	1	1/22/2013 11:24:18 AM
Iron	4.6	0.20	*	mg/L	10	1/22/2013 2:45:46 PM
Magnesium	47	1.0	)	mg/L	1	1/22/2013 11:24:18 AM
Manganese	1.3	0.020	*	mg/L	10	1/22/2013 2:45:46 PM
Nickel	0.11	0.010	*	mg/L	1	1/22/2013 11:24:18 AM
Potassium	4.4	1.0	)	mg/L	1	1/22/2013 11:24:18 AM
Silver	ND	0.0050	)	mg/L	1	1/22/2013 11:24:18 AM
Sodium	530	10	)	mg/L	10	1/22/2013 2:45:46 PM
Zinc	0,020	0,010	)	mg/L	1	1/22/2013 11:24:18 AM
EPA 200.8: METALS						Analyst: DBD
Antimony	ND	0.0025	5	mg/L	2.5	1/24/2013 10:57:24 AM
Arsenic	ND	0.0025	i	mg/L	2.5	1/24/2013 10:57:24 AM
Lead	ND	0,0025	j	mg/L	2.5	1/24/2013 10:57:24 AM
Copper	0.0056	0.0025	5	mg/L	2,5	1/24/2013 10:57:24 AM
Selenium	ND	0.0025	5	mg/L	2.5	1/24/2013 10:57:24 AM
Thallium	ND	0.0025	5	mg/L	2,5	1/24/2013 10:57:24 AM
EPA METHOD 245.1: MERCURY						Analyst: TMG
Mercury	ND	0.00020	)	mg/L	1	1/22/2013 12:19:25 PM
EPA METHOD 8260B: VOLATILES						Analyst: RAA
Веплепе	ND	1,0	)	µg/L	1	1/22/2013 6:32:03 AM
Toluene	ND	1.0	)	μg/L	1	1/22/2013 6:32:03 AM
Ethylbenzene	ND	1.0	)	μg/L	1	1/22/2013 6:32:03 AM
Methyl tert-butyl ether (MTBE)	ND	1.6	ו	μg/L	1	1/22/2013 6:32:03 AM
1,2,4-Trimethylbenzene	ND	1.0	)	μg/L	1	1/22/2013 6:32:03 AM
1,3,5-Trimethylbenzene	ND	1.0	)	μg/L	1	1/22/2013 6:32:03 AM
1,2-Dichloroethane (EDC)	ND	1.0	)	μg/L	1	1/22/2013 6:32:03 AM
1,2-Dibromoethane (EDB)	ND	1.0	כ	μg/L	1	1/22/2013 6:32:03 AM
Naphthalene	ND	2.0	כ	μg/L	1	1/22/2013 6:32:03 AM
1-Methylnaphthalene	ND	4.0	)	μg/L	1	1/22/2013 6:32:03 AM
2-Methylnaphthalene	ND	4.0	3	μg/L	1	1/22/2013 6:32:03 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 28 of 52

# Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

Lab ID: 1301596-011

Client Sample ID: GBR-49

Collection Date: 1/16/2013 3:51:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Acetone	ND	10	μg/L	1	1/22/2013 6:32:03 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Bromoform	ND	1.0	µg/L	1	1/22/2013 6:32:03 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 6:32:03 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 6:32:03 AM
Carbon disulfide	ND	10	μ <b>g/L</b>	1	1/22/2013 6:32:03 AM
Carbon Tetrachloride	ND	1.0	μ <b>g/L</b>	1	1/22/2013 6:32:03 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 6:32:03 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 6:32:03 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
4-Chlorotoluene	ND	1.0	μg/L	1 =	1/22/2013 6:32:03 AM
cis-1,2-DCE	ND	1.0	µg/L	1	1/22/2013 6:32:03 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 6:32:03 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6 32 03 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 6 32 03 AM
1,1-Dichloroethene	ND	1.0	µg/L	1	1/22/2013 6:32 03 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,3-Dichloropropane	ND	1.0	μg/L	= 1	1/22/2013 6:32:03 AM
2,2-Dichloropropane	ND	2.0	µg/L	1	1/22/2013 6:32:03 AM
1,1-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 6:32:03 AM
Isopropyibenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 6:32:03 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 6:32:03 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 6:32:03 AM
n-Propylbenzene	ND	1.0	μ <b>g/L</b>	1	1/22/2013 6:32:03 AM
sec-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Styrene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
tert-Butylbenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	1/22/2013 6:32:03 AM

Matrix: AQUEOUS

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 29 of 52

# **Analytical Report** Lab Order 1301596 Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: GBR-49

CLIENT: Western Refining Southwest, Inc.

Collection Date: 1/16/2013 3:51:00 PM **GBR** Annual Sampling Lab ID: 1301596-011 Matrix: AQUEOUS Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qua	d Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Tetrachloroethene (PCE)	1,4	1.0	μg/L	1	1/22/2013 6:32:03 AM
trans-1,2-DCE	ND	1.0	μ <b>g/</b> L	1	1/22/2013 6:32:03 AM
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,1,1-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	1/22/2013 6:32:03 AM
Trichloroethene (TCE)	ND	1.0	μ <b>g</b> /L	1	1/22/2013 6:32:03 AM
Trichlorofluoromethane	ND	1,0	μ <b>g/</b> L	1	1/22/2013 6:32:03 AM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	1/22/2013 6;32:03 AM
Vinyl chloride	ND	1.0	µg/L	1	1/22/2013 6:32:03 AM
Xylenes, Total	ND	1.5	μg/L	1	1/22/2013 6:32:03 AM
Surr: 1,2-Dichloroethane-d4	88.7	70-130	%REC	1	1/22/2013 6:32:03 AM
Surr: 4-Bromofluorobenzene	91.4	69.5-130	%REC	1	1/22/2013 6:32:03 AM
Surr: Dibromofluoromethane	99.5	70-130	%REC	1	1/22/2013 6:32:03 AM
Sum: Toluene-d8	91.8	70-130	%REC	1	1/22/2013 6:32:03 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>					Analyst: JML
Conductivity	3900	0.010	µmhos/cm	1	1/22/2013 1:55:24 PM
SM4500-H+B: PH					Analyst: JML
pH	6.93	1.68 H	l pH units	1	1/22/2013 1:55:24 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	220	20	mg/L CaCO3	1	1/22/2013 1:55 24 PM
Carbonate (As CaCO3)	ND	2,0	mg/L CaCO3	1	1/22/2013 1:55:24 PM
Total Alkalinity (as CaCO3)	220	20	mg/L CaCO3	1	1/22/2013 1:55:24 PM
SM2540C MOD: TOTAL DISSOLVED SO	LIDS				Analyst: KS
Total Dissolved Solids	3290	40.0	mg/L	1	1/23/2013

- Value exceeds Maximum Contaminant Level,
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - RPD outside accepted recovery limits
  - Spike Recovery outside accepted recovery limits 30 of 52

# Hall Environmental Analysis Laboratory, Inc.

Date Reported; 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

1301596-012 Lab ID:

Client Sample ID: GBR-17

Collection Date: 1/17/2013 11:53:00 AM

Received Date: 1/18/2013 9:53:00 AM

EPA METHOD 300.0: ANIONS Fluoride Chloride	0.71 47 ND	0.10	mg/L	1651-1	Analyst: JRR
Chloride	47 ND		mg/L		
	ND	10		1	1/18/2013 10:19 04 PM
A 114 A 614 . (4 A A 4)			mg/L	20	1/18/2013 10:31:28 PM
Nitrogen, Nitrite (As N)	0.00	0.10	mg/L	1	1/18/2013 10:19:04 PM
Bromide	0.22	0.10	mg/L	1	1/18/2013 10:19:04 PM
Nitrogen, Nitrate (As N)	5.3	0.10	mg/L	1	1/18/2013 10:19:04 PM
Sulfate	1300	25	* mg/L	50	1/22/2013 12:46:09 AM
EPA METHOD 200.7: METALS					Analyst: ELS
Calcium	390	5.0	mg/L	5	1/22/2013 11:35:06 AM
Iron	1.2	0.10	* mg/L	5	1/22/2013 11:35:06 AM
Magnesium	31	5.0	mg/L	5	1/22/2013 11:35:06 AM
Manganese	0.045	0.010	mg/L	5	1/22/2013 11:35:06 AM
Potassium	ND	5.0	mg/L	5	1/22/2013 11:35:06 AM
Sodium	290	5.0	mg/L	5	1/22/2013 11:35:06 AM
EPA METHOD 8270C: PAHS					Analyst: JDC
Naphthalene	ND	0.50	µg/L	1	1/23/2013 4:09:55 PM
1-Methylnaphthalene	NĐ	0.50	μg/L	1	1/23/2013 4:09:55 PM
2-Methylnaphthalene	ND	0.50	μg/L	1	1/23/2013 4:09:55 PM
Acenaphthylene	ND	0.50	μg/L	1	1/23/2013 4:09:55 PM
Acenaphthene	NĐ	0.50	μg/L	1	1/23/2013 4:09:55 PM
Fluorene	NĐ	0.50	μg/L	1	1/23/2013 4:09:55 PM
Phenanthrene	ND	0.50	µg/L	1	1/23/2013 4:09:55 PM
Anthracene	NĐ	0.75	µg/L	1	1/23/2013 4:09:55 PM
Fluoranthene	NĐ	0.75	µg/L	1	1/23/2013 4:09:55 PM
Pyrene	ND	0.50	µg/L	1	1/23/2013 4:09:55 PM
Benz(a)anthracene	ND	0.50	μg/L	1	1/23/2013 4:09:55 PM
Chrysene	МÐ	0.50	µg/L	1	1/23/2013 4:09:55 PM
Benzo(b)fluoranthene	ND	0.50	µg/L	1	1/23/2013 4:09:55 PM
Benzo(k)fluoranthene	ND	0.50	µg/L	1	1/23/2013 4:09:55 PM
Benzo(a)pyrene	ND	0.50	μg/L	1	1/23/2013 4:09:55 PM
Dibenz(a,h)anthracene	ND	0.75	μg/L	1	1/23/2013 4:09:55 PM
Benzo(g,h,i)perylene	ND	0.75	µg/L	1	1/23/2013 4:09:55 PM
Indeno(1,2,3-cd)pyrene	ND	1.0	µg/L	1	1/23/2013 4:09:55 PM
Surr: Benzo(e)pyrene	66.0	38-145	%REC	1	1/23/2013 4:09:55 PM
Surr: N-hexadecane	73.2	40-107	%REC	1	1/23/2013 4:09:55 PM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	1.0	μ <b>g/</b> L	1	1/22/2013 7:00 05 AM
Toluene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Ethylbenzene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	μ <b>g/</b> L	1	1/22/2013 7:00:05 AM
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	1/22/2013 7:00:05 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RL Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 31 of 52

Date Reported: 1/29/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**Client Sample ID: GBR-17** 

Project: GBR Annual Sampling

Collection Date: 1/17/2013 11:53:00 AM

Lab ID: 1301596-012

Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 7:00:05 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 7:00:05 AM
2-Methylnaphthalene	NĎ	4.0	μ <b>g/L</b>	1	1/22/2013 7:00:05 AM
Acetone	ND	10	μg/L	1	1/22/2013 7:00:05 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Bromodichloromethane	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Bromoform	ND	1.0	µg/L	1	1/22/2013 7:00:05 AM
Bromomethane	ND	3.0	µg/L	1	1/22/2013 7:00:05 AM
2-Butanone	ND	10	µg/L	1	1/22/2013 7:00:05 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 7:00:05 AM
Carbon Tetrachloride	ND	1,0	μg/L	1	1/22/2013 7:00:05 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 7:00:05 AM
Chloroform	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 7:00:05 AM
2-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
cis-1,2-DCE	ND	1.0	µg/L	1	1/22/2013 7:00:05 AM
cis-1,3-Dichloropropene	ND	1.0	μ <b>g/L</b>	1	1/22/2013 7:00:05 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 7:00:05 AM
Dibromochloromethane	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 7 00 05 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,4-Dichlorobenzene	ND	1.0	µg/L	1	1/22/2013 7:00:05 AM
Dichlorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 7:00 05 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 7:00:05 AM
1,1-Dichloropropene	ND	1.0	µg/L	1	1/22/2013 7:00:05 AM
Hexachlorobutadiene	ND	1.0	µg/L	1	1/22/2013 7:00:05 AM
2-Hexanone	ND	10	μg/L	1	1/22/2013 7:00:05 AM
Isopropylbenzene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 7:00:05 AM
4-Methyl-2-pentanone	ND	10	μg/L	1	1/22/2013 7:00:05 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 7:00:05 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 7:00:05 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery lithits 32 of 52

#### **Analytical Report**

Lab Order 1301596

Date Reported: 1/29/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

Lab ID: 1301596-012 Client Sample ID: GBR-17

Collection Date: 1/17/2013 11:53:00 AM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: RAA
n-Propylbenzene	ND	1.0		μ <b>g/</b> L	1	1/22/2013 7:00:05 AM
sec-Butylbenzene	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
Styrene	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
tert-Butyibenzene	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
1,1,1,2-Tetrachloroethane	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2013 7:00:05 AM
Tetrachloroethene (PCE)	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2013 7:00:05 AM
trans-1,3-Dichloropropene	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
1,2,3-Trichlorobenzene	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
1,2,4-Trichlorobenzene	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
1,1,1-Trichloroethane	ND	1,0		μg/L	1	1/22/2013 7:00:05 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2013 7:00:05 AM
Trichloroethene (TCE)	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
Trichlorofluoromethane	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
1,2,3-Trichloropropane	ND	2.0		μg/L	1	1/22/2013 7:00:05 AM
Vinyl chloride	ND	1.0		μg/L	1	1/22/2013 7:00:05 AM
Xylenes, Total	ND	1.5		μg/L	1	1/22/2013 7:00:05 AM
Surr: 1,2-Dichloroethane-d4	88.6	70-130		%REC	1	1/22/2013 7:00:05 AM
Surr: 4-Bromofluorobenzene	96.6	69.5-130		%REC	1	1/22/2013 7:00:05 AM
Surr: Dibromofluoromethane	99.5	70-130		%REC	1	1/22/2013 7:00:05 AM
Surr: Toluene-d8	92.2	70-130		%REC	1	1/22/2013 7:00:05 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	2700	0.010		µmhos/cm	1	1/22/2013 2:09:38 PM
SM4500-H+B: PH						Analyst: JML
рН	7.35	1.68	Н	pH units	1	1/22/2013 2 09:38 PM
SM2320B: ALKALINITY						Analyst: JML
Bicarbonate (As CaCO3)	200	20		mg/L CaCO3	1	1/22/2013 2:09:38 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	1/22/2013 2:09:38 PM
Total Alkalinity (as CaCO3)	200	20		mg/L CaCO3	1	1/22/2013 2:09:38 PM
SM2540C MOD: TOTAL DISSOLVED SO	LIDS					Analyst: KS
Total Dissolved Solids	2200	40.0		mg/L	1	1/23/2013

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- Sample pH greater than 2
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- 11 Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 33 of 52

Date Reported: 1/29/2013

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: GBR-31

**GBR Annual Sampling** Project:

CLIENT: Western Refining Southwest, Inc.

Collection Date: 1/17/2013 1:19:00 PM

Lab ID: 1301596-013 Matrix: AQUEOUS

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: JRR
Fluoride	0.65	0.50		mg/L	5	1/18/2013 10:43:52 PM
Chloride	79	2.5		mg/L	5	1/18/2013 10:43:52 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	1/18/2013 10:43:52 PM
Bromide	ND	0.50		mg/L	5	1/18/2013 10:43:52 PM
Nitrogen, Nitrate (As N)	2.3	0.50		mg/L	5	1/18/2013 10:43:52 PM
Sulfate	1600	25	*0	mg/L	50	1/22/2013 12:58:33 AM
EPA METHOD 200.7: METALS						Analyst: ELS
Calcium	410	5.0		mg/L	5	1/22/2013 11:56:50 AM
Iron	15	0.40	*	mg/L	20	1/22/2013 2:49:37 PM
Magnesium	36	1.0		mg/L	1	1/22/2013 11:53:25 AM
Manganese	0.77	0.0020	•	mg/L	1	1/22/2013 11:53:25 AM
Potassium	5.1	1.0		mg/L	1	1/22/2013 11:53:25 AM
Sodium	430	5.0		mg/L	5	1/22/2013 11:56:50 AM
EPA METHOD 8270C: PAHS						Analyst: JDC
Naphthalene	ND	0.50		μg/L	1	1/23/2013 4:33:06 PM
1-Methylnaphthalene	ND	0.50		μg/L	1	1/23/2013 4:33:06 PM
2-Methylnaphthalene	ND	0.50		μg/L	1	1/23/2013 4:33:06 PM
Acenaphthylene	ND	0.50	ı	μg/L	1	1/23/2013 4:33:06 PM
Acenaphthene	ND	0.50	ı	µg/L	1	1/23/2013 4:33:06 PM
Fluorene	ND	0.50	ı	μg/L	1	1/23/2013 4:33:06 PM
Phenanthrene	ND	0.50	I	μg/L	1	1/23/2013 4:33:06 PM
Anthracene	ND	0.75	i	μg/L	1	1/23/2013 4:33:06 PM
Fluoranthene	0.92	0.75	i	μg/L	1	1/23/2013 4:33:06 PM
Pyrene	0.92	0.50	)	μg/L	1	1/23/2013 4:33:06 PM
Benz(a)anthracene	0.53	0.50	)	μg/L	1	1/23/2013 4:33:06 PM
Chrysene	0.56	0.50	)	μg/L	1	1/23/2013 4:33:06 PM
Benzo(b)fluoranthene	0.54	0.50	)	μg/L	1	1/23/2013 4:33:06 PM
Benzo(k)fluoranthene	ND	0.50	)	µg/L	1	1/23/2013 4:33:06 PM
Benzo(a)pyrene	ND	0.50	)	μg/L	1	1/23/2013 4:33:06 PM
Dibenz(a,h)anthracene	ND	0.75	i	μg/L	1	1/23/2013 4:33:06 PM
Benzo(g,h,i)perylene	ND	0.75	,	µg/L	1	1/23/2013 4:33:06 PM
Indeno(1,2,3-cd)pyrene	ND	1.0	)	µg/L	1	1/23/2013 4:33:06 PM
Surr: Benzo(e)pyrene	58.1	38-145		%REC	1	1/23/2013 4:33:06 PM
Sur: N-hexadecane	51.8	40-107	•	%REC	1	1/23/2013 4:33:06 PM
EPA METHOD 8260B: VOLATILES						Analyst: RAA
Benzene	ND	1.0	)	μg/L	1	1/22/2013 7:28:10 AM
Toluene	ND	1.0	)	μg/L	1	1/22/2013 7:28:10 AM
Ethylbenzene	ND	1.0	)	µg/L	1	1/22/2013 7:28:10 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	)	μg/L	1	1/22/2013 7:28:10 AM
1,2,4-Trimethylbenzene	ND	1.0	)	µg/L	1	1/22/2013 7:28:10 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 34 of 52

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Project: GBR Annual Sampling

**Lab ID:** 1301596-013

Client Sample ID: GBR-31

Collection Date: 1/17/2013 1:19:00 PM

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				Thursday.	Analyst: RAA
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	1/22/2013 7:28:10 AM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
Naphthalene	ND	2.0	μg/L	1	1/22/2013 7:28:10 AM
1-Methylnaphthalene	ND	4.0	μg/L	1	1/22/2013 7:28:10 AM
2-Methylnaphthalene	ND	4.0	μ <b>g/L</b>	1	1/22/2013 7:28:10 AM
Acetone	ND	10	µg/L	1	1/22/2013 7:28:10 AM
Bromobenzene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
Bromodichloromethane	ND	1.0	µg/L	1	1/22/2013 7:28:10 AM
Bromoform	ND	1.0	μg/L	1	1/22/2013 7 28 10 AM
Bromomethane	ND	3.0	μg/L	1	1/22/2013 7:28:10 AM
2-Butanone	ND	10	μg/L	1	1/22/2013 7:28:10 AM
Carbon disulfide	ND	10	μg/L	1	1/22/2013 7:28:10 AM
Carbon Tetrachloride	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
Chlorobenzene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
Chloroethane	ND	2.0	μg/L	1	1/22/2013 7:28:10 AM
Chloroform	ND	1,0	μg/L	1	1/22/2013 7:28:10 AM
Chloromethane	ND	3.0	μg/L	1	1/22/2013 7:28:10 AM
2-Chlorotoluene	ND	1.0	µg/L	1	1/22/2013 7:28:10 AM
4-Chlorotoluene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
cis-1,2-DCE	ND	1.0	µg/L	1 =	1/22/2013 7:28:10 AM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	1/22/2013 7 28 10 AM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	1/22/2013 7:28:10 AM
Dibromochloromethane	ND	_ 1.0	μg/L	1	1/22/2013 7:28:10 AM
Dibromomethane	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	1/22/2013 7 28 10 AM
1,4-Dichlorobenzene	ND	1.0	µg/L	1	1/22/2013 7:28:10 AM
Dichtorodifluoromethane	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
1,1-Dichloroethane	ND	1.0	μg/L	1	1/22/2013 7 28 10 AM
1,1-Dichloroethene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
1,2-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
1,3-Dichloropropane	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
2,2-Dichloropropane	ND	2.0	μg/L	1	1/22/2013 7:28:10 AM
1,1-Dichloropropene	ND	1.0	µg/L	1	1/22/2013 7:28:10 AM
Hexachlorobutadiene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
2-Hexanone	ND	10	μ <b>g/L</b>	1	1/22/2013 7:28:10 AM
Isopropylbenzene	ND	1.0	μ <b>g/L</b>	1	1/22/2013 7:28:10 AM
4-Isopropyltoluene	ND	1.0	μg/L	1	1/22/2013 7:28:10 AM
4-Methyl-2-pentanone	ND	10	µg/L	1	1/22/2013 7:28:10 AM
Methylene Chloride	ND	3.0	μg/L	1	1/22/2013 7:28:10 AM
n-Butylbenzene	ND	3.0	μg/L	1	1/22/2013 7:28:10 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 35 of 52

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/29/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: GBR-31 Collection Date: 1/17/2013 1:19:00 PM

Matrix: AQUEOUS

Project: **GBR Annual Sampling** 

1301596-013

Lab ID:

Received Date: 1/18/2013 9:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES	100		•			Analyst: RAA
n-Propylbenzene	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
sec-Butylbenzene	ND	1,0		μg/L	1	1/22/2013 7:28:10 AM
Styrene	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2013 7:28:10 AM
1,1,1,2-Tetrachloroethane	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
1,1,2,2-Tetrachloroethane	ND	2.0		μg/L	1	1/22/2013 7:28:10 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2013 7:28:10 AM
trans-1,2-DCE	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
trans-1,3-Dichloropropene	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2013 7:28:10 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2013 7:28:10 AM
1,1,1-Trichloroethane	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2013 7:28:10 AM
Trichloroethene (TCE)	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
Trichlorofluoromethane	ND	1.0		μg/L	1	1/22/2013 7:28:10 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2013 7:28:10 AM
Vinyl chloride	ND	1.0		µg/L	1	1/22/2013 7:28:10 AM
Xylenes, Total	ND	1.5		μg/L	1	1/22/2013 7 28:10 AM
Surr: 1,2-Dichloroethane-d4	88.6	70-130		%REC	1	1/22/2013 7:28:10 AM
Surr: 4-Bromofluorobenzene	98.6	69.5-130		%REC	1	1/22/2013 7:28:10 AM
Surr: Dibromofluoromethane	96.7	70-130		%REC	1	1/22/2013 7:28:10 AM
Surr: Toluene-d8	93.6	70-130		%REC	1	1/22/2013 7:28:10 AM
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: JML
Conductivity	3300	0.010		µmhos/cm	1	1/22/2013 2:23:27 PM
SM4500-H+B: PH						Analyst: JML
рН	7.26	1.68	Н	pH units	1	1/22/2013 2:23:27 PM
SM2320B: ALKALINITY						Analyst: JML
Bicarbonate (As CaCO3)	210	20		mg/L CaCO3	1	1/22/2013 2:23:27 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	1/22/2013 2:23:27 PM
Total Alkalinity (as CaCO3)	210	20		mg/L CaCO3	1	1/22/2013 2:23:27 PM
SM2540C MOD: TOTAL DISSOLVED SO	DLIDS					Analyst: KS
Total Dissolved Solids	2720	100		mg/L	1	1/23/2013

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 36 of 52



#### YOUR LAB OF CHOICE

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # : L616482-01

Date Received Description

22, 2013 January

Site ID :

Sample ID

1301596-002E GBR-24D

Project # :

Collected By : Collection Date :

01/15/13 12:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC. Reported: 01/28/13 14:33 Printed: 01/28/13 14:34



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REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat

4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # : L616482-02

Date Received Description

January 22, 2013

1301596-003E GBR-30

Site ID : Project # :

Sample ID

Collected By : Collection Date :

01/15/13 14:00

Parameter	Result	Det. Limit	Units	Method	Date Dil.
Phosphorus, Total	0.65	0.10	mg/l	365.4	01/26/13 1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL) Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



VOUR TAB OF CHUICE

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Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # : L616482-03

Date Received Description

Collection Date :

22, 2013 January

1301596-004E GRW-6

01/15/13 14:50

Site ID : Project # :

Sample ID Collected By

Method Unita Parameter Result Det. Limit Date Dil. Phosphorus, Total BDL 0.10 mg/1365.4 01/26/13 1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



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REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat

4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # : L616482-04

Date Received :

January 22, 2013

Description

Sample ID

1301596-005E GRW-3

Site ID : Project # :

Collected By : Collection Date :

01/15/13 15:33

Parameter	Result	Det. Limit	Units	Method	Date	Dil.	_
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1	

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



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12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # : L616482-05

Date Received

Description

22, 2013 January

Site ID :

Sample ID

1301596-006D GBR-51

Project # :

Collected By

Collection Date : 01/16/13 11:35

Parameter Result Det. Limit Units Method Date D11. Phosphorus, Total 0.13 0.10 mg/l365.4 01/26/13 1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



YOUR LABOR CHOICE

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

January 28, 2013

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

ESC Sample # : L616482-06

Date Received Description

January 22, 2013

Sample ID

1301596-007D GBR-52

Site ID : Project # :

Collected By

Collection Date :

01/16/13 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

Date Received 22, 2013 January

Description

Sample ID

1301596-008D GBR-50

Collected By

Collection Date : 01/16/13 14:05 ESC Sample # : L616482-07

Site ID :

January 28, 2013

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0014289

Est. 1970

REPORT OF ANALYSIS

January 28, 2013

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

ESC Sample # : L616482-08

Date Received

January 22, 2013

Site ID :

Description Sample ID

1301596-009D GBR-48

Project # :

Collected By : Collection Date :

01/16/13 14:35

Parameter Result Det. Limit Units Method Date Dil. Phosphorus, Total 0.13 01/26/13 1 0.10 mg/1365.4

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL) Note: The reported analytical results relate only to the sample submitted.

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#### TOTAL SECTION OF THE PARTY OF T

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Tax I.D. 62-0814289

L616482-09

Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat

4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # :

Date Received Description 22, 2013 January

Site ID :

Sample ID

1301596-010D GBR-32

Project # :

Collected By : Collection Date :

01/16/13 15:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



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Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

Date Received Description

January 22, 2013

ESC Sample # : L616482-10

Sample ID

1301596-011D GBR-49

Site ID : Project # :

Collected By : Collection Date :

01/16/13 15:51

Parameter	Result	Det. Limit	Units	Method	Date	Dil.	
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1	

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat

4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

ESC Sample # : L616482-11

Date Received Description

22, 2013 January

:

Site ID :

Sample ID

1301596-012E GBR-17

Project # :

Collected By

Collection Date :

01/17/13 11:53

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	BDL	0.10	mg/l	365.4	01/26/13	1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



YOUR LAB OF CHOICE

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

January 28, 2013

L616482-12 ESC Sample # :

Date Received Description

Sample ID

January 22, 2013

1301596-013E GBR-31

Site ID : Project # :

Collected By : Collection Date :

01/17/13 13:19

Dil. Det. Limit Units Date Result Method Parameter 01/26/13 Phosphorus, Total 0.18 0.10 365.4 mg/1

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.



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Hall Environmental Analysis Laboratory Anne Thorne

4901 Hawkins NE

Albuquerque, NM 87109

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12065 Lebanon Rd.

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L616482

January 20, 2013

			Laboratory	Blank					
Analyte	Result		Units	₹ Re	c	Limit		Batch Date	Analyzed
Phosphorus, Total	< .1		mg/l				2.	WG633459 01/2	6/13 09:54
Analyte	Units	Resul	Duplic lt Dup	ate Nicate	RPD	Limit		Ref Samp	Batch
Phosphorus, Total Phosphorus, Total	mg/l mg/l	1.50 3.80	1.5		0 2.60	20 20		L616576-01 L616445-01	WG633459 WG633459
Analyte	Units		ratory Com		ple sult	₹ Rec	A	Limit	Batch
Phosphorus, Total	mg/l	1		1.01		101.		90-110	<b>WG6</b> 33459
Analyte	Unita	Laboratory Result	y Control Ref	Sample D		Limit	RPD	Limit	Batch
Phosphorus, Total	mg/l	1.01	1.01	101.	N.	90-110	0	20	WG633459
Analyte	Units	MS Res	Matrix &		% Rec	Limit		Ref Samp_	Batch
Phosphorus, Total	mg/l	2.50	0	2.5	100.	90-110		L616465-01	WG633459
Analyte	Units	Mat:	rix Spike Ref	Duplicat	e Limit	RP <u>D</u>	Limit	Ref Samp	Batch
Phosphorus, Total	mg/l	2.47	2.50	98.8	90-110	1.21	20	L616465-01	WG633459

Batch number /Run number / Sample number cross reference

WG633459: R2518697: L616482-01 02 03 04 05 06 07 08 09 10 11 12

<sup>\* \*</sup> Calculations are performed prior to rounding of reported values.

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

**Project:** 

**GBR** Annual Sampling

Sample ID MB-5750	Samp	Туре: МЕ	BLK	Tes	tCode: El	PA Method	200.7: Metals			
Client ID: PBW	Bato	h ID: 57	50	F	RunNo: 8	177				
Prep Date: 1/21/2013	Analysis I	Date: 1/	22/2013	5	SeqNo: 2	36536	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	NĐ	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID LCS-5750	Samp	Type: LC	S	Test	Code: El	<sup>2</sup> A Method	200.7: Metals			
Client ID: LCSW	Bato	h ID: 57	50	R	RunNo: 8	177				
Prep Date: 1/21/2013	Analysis I	Date: 1/.	22/2013	S	SeqNo: 2	36537	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.54	0.0020	0.5000	0	107	85	115			
Cadmium	0.53	0.0020	0.5000	0	105	85	115			
Calcium	52	1.0	50.00	0	104	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Magnesium	53	1.0	50.00	0	106	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Nickel	0.49	0.010	0.5000	0	97.7	85	115			
Potassium	51	1.0	50.00	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	53	1.0	50.00	0	105	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

ND Not Detected at the Reporting Limit

Page 37 of 52

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

ND

ND

0.0025

0.0025

Project:

Selenium

Thallium

**GBR Annual Sampling** 

Sample ID	LLLCS-5750	Samp	Type: LC	SLL	Tes	tCode: El	PA 200.8: M	letais			
Client ID:	BatchQC	Bato	h ID: <b>57</b>	50	. F	RunNo: 8	242				
Prep Date:	1/21/2013	Analysis	Date: 1/	24/2013		SeqNo: 2	38213	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony		0.053	0.0025	0.05000	0	106	85	115			
vsenic		0.051	0.0025	0.05000	_ o	102	85	115			
.ead		0.051	0.0025	0.05000	0	103	85	115			
Copper		0.050	0.0025	0.05000	0	101	85	115			
Selenium		0.053	0.0025	0.05000	0	106	85	115			
Thallium		0.052	0.0025	0.05000	0	103	85	115	-		
Sample ID	MB-5750	Samp	Туре: МЕ	BLK	Tes	tCode: El	PA 200.8: M	letals			
Client ID:	PBW	Bato	th ID: 57	50	F	RunNo: 8	242				
Prep Date:	1/21/2013	Analysis	Date: 1/	24/2013	\$	eqNo: 2	38216	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony		ND	0.0025								
Arsenic		ND	0.0025								
.ead		ND	0.0025								
		ND	0.0025								

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 38 of 52

### Hall Environmental Analysis Laboratory, Inc.

WO#:

**RPDLimit** 

**RPDLimit** 

1301596

29-Jan-13

Qual

Qual

Client:

Western Refining Southwest, Inc.

**Project:** 

**GBR Annual Sampling** 

Sample ID MB-5767

Prep Date: 1/22/2013

SampType: MBLK

TestCode: EPA Method 245.1: Mercury

Client ID:

**PBW** Batch ID: 5767 RunNo: 8180

Analysis Date: 1/22/2013

SeqNo: 236595

%REC LowLimit

Units: mg/L HighLimit

Analyte Мегситу

Result **PQL** 

ND 0.00020

SampType: LCS

TestCode: EPA Method 245.1: Mercury

LowLimit

Sample ID LCS-5767 Client ID: LCSW

Batch ID: 5767

RunNo: 8180

Prep Date: 1/22/2013

SeqNo: 236596

Units: mg/L

Analyte

Analysis Date: 1/22/2013

Result

SPK value SPK Ref Val

SPK value SPK Ref Val

HighLimit %RPD

%RPD

Mercury

0.0050 0.00020 0.005000

PQL

%REC 99.7

80

120

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits 1

Sample pH greater than 2

Analyte detected in the associated Method Blank В

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

Page 39 of 52

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

	estern Retining S BR Annual Samp		st, mc.							
Sample ID MB	Samp1	Гуре: МЕ	BLK	Tes	tCode: E	PA Method	300.0: Anion	5	<del></del>	
Client ID: PBW	Batc	h ID: R8	1156		RunNo: 8	156				
Prep Date:	Analysis [				SeqNo: 2		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	ND	0.10		<del></del> .	-					
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
litrate+Nitrite as N	ND	0.20								
Sample ID LCS	Samp1	Гуре: LC	s	Tes	tCode: El	PA Method	300.0: Anion	ş		
Client ID: LCSW	Batcl	h ID: R8	156	F	RunNo: 8	156				
Prep Date:	Analysis D	Date: 1/	18/2013	\$	SeqNo: 2	35889	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.8	0.50	5.000	0	95.7	90	110			
litrogen, Nitrite (As N)	0.92	0.10	1.000	0	91.9	90	110			
Bromide	2.4	0.10	2.500	0	96.8	90	110			
litrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
litrate+Nitrite as N	3.4	0.20	3.500	0	98.5	90	110			
Sample ID 1301596-00	D2BMS SampT	- Гуре: МS	3	Tes	(Code: El	PA Method	300.0: Anion:	5		
Client ID: GBR-24D	Batcl	h ID: R8	156	F	RunNo: 8	156				
Prep Date:	Analysis D	Date: 1/	18/2013	\$	SeqNo: 2	35901	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	1,5	0.10	0.5000	1.066	84.7	76.6	110		•	
dromide	3.3	0.10	2,500	0.9555	93.9	83.3	107			
Sample ID 1301596-00	D2BMSD SampT	Гуре: М\$	SD	Tes	tCode: El	PA Method	300.0: Anion:	5		
Client ID: GBR-24D	Batch	h ID: R8	156	F	RunNo: 8	156				
Prep Date:	Analysis D	Pate: 1/	18/2013	\$	SeqNo: 2	35902	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	1.5	0.10	0.5000	1.066	91.7	76.6	110	2.32	20	
Bromide	3.3	0.10	2,500	0.9555	95.0	83.3	107	0.763	20	
Sample ID MB	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	300.0: Anion:	5		
Client ID: PBW	Batch	h ID: R8	170	F	RunNo: 8	170				
Prep Date:	Analysis C	Date: 1/	21/2013	S	SeqNo: 2	36183	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50					-			
Sulfate	ND	0.50								

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

B Analyte detected in the associated Method Blank

RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

ng Limit Page 40 of 52

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

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: R8170

RunNo: 8170

Prep Date:

Analysis Date: 1/21/2013

SeqNo: 236183

Units: mg/L

Analyte

Result PQL

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD **RPDLimit** 

Nitrate+Nitrite as N

Sample ID LCS

ND 0.20

SampType: LCS

TestCode: EPA Method 300.0: Anions

Qual

Client ID: LCSW	Batch	ID: R8	170	F	RunNo: 8	170				
Prep Date:	Analysis D	ate: 1/	21/2013	S	SeqNo: 2	36184	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit_	Qual
Chloride	4.7	0.50	5.000	0	94.0	90	110			
Sulfate	9.5	0.50	10.00	0	94.7	90	110			
Nitrate+Nitrite as N	3.4	0.20	3,500	0	96.6	90	110			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- Sample pH greater than 2

- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R

Page 41 of 52

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID 5ml-rb	Sampl	Type: MBLK	Tes	stCode: E	PA Method	8260B: VOL	ATILES		-014
Client ID: PBW	Batcl	h ID: R8173		RunNo: 8	173				
Prep Date:	Analysis E	Date: 1/21/2013		SeqNo: 2	36348	Units: µg/L			
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD RF	DLimit	Qual
Benzene	ND	1.0							
Toluene	ND	1.0							
Ethylbenzene	ND	1.0							
Methyl tert-butyl ether (MTBE)	ND	1.0							
1,2,4-Trimethylbenzene	ND	1.0							
1,3,5-Trimethylbenzene	ND	1.0							
1,2-Dichloroethane (EDC)	ND	1.0							
1,2-Dibromoethane (EDB)	ND	1.0							
Naphthalene	ND	2.0							
1-Methylnaphthalene	ND	4.0							
2-Methylnaphthalene	ND	4.0							
Acetone	ND	10							
Bromobenzene	ND	1.0							
Bromodichloromethane	ND	1.0							
Bromoform	ND	1.0							
Bromomethane	ND	3.0							
2-Butanone	ND	10							
Carbon disulfide	ND	10							
Carbon Tetrachloride	ND	1.0							
Chlorobenzene	ND	1.0							
Chloroethane	ND	2.0							
Chloroform	ND	1.0							
Chloromethane	ND	3.0							
2-Chlorotoluene	ND	1.0							
4-Chlorotoluene	ND	1.0							
dis-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							

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 42 of 52

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 5ml-rb	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: R8	173	F	RunNo: 8	173				
Prep Date:	Analysis D	ate: 1/	21/2013	9	SeqNo: 2	36348	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1.2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1:0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.6		10.00		85.5	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.3	69.5	130			
Surr: Dibromofluoromethane	9.2		10.00		91.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID 100ng Ics	SampT	ype: LC	S	Tes	tCode: El	A Method	8260B: VOL	ATILES		_
Client ID: LCSW	Batch	ID: R8	173	F	RunNo: 8	173				
Prep Date:	Analysis D	ate: 1/	21/2013	9	SeqNo: 2	36350	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.0	70	130			
Toluene	18	1.0	20.00	0	90.7	80	120			
Chlorobenzene	19	1.0	20.00	0	92.6	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.1	73.7	122			
Trichloroethene (TCE)	17	1.0	20,00	0	85.9	70	130			
Surr: 1,2-Dichloroethane-d4	9,3		10.00		93.5	70	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		88.1	69.5	130			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 100ng Ics	SampT	ype: LC	S	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batch	1D: R8	173	F	RunNo: 8	173				
Prep Date:	Analysis D	ate: 1/2	21/2013	=1 8	SeqNo: 2	36350	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	9.3		10.00		93,1	70	130			
Surr: Toluene-d8	9.0		10.00		89.7	70	130			
Sample ID b4	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES	*	

Client ID: PBW	Batch	ID: R8	173	F	lunNo: 8	173					
Prep Date:	Analysis D	ate: 1/	21/2013	S	ieqNo: 2	36377	Units: μg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	1,0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	3.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	3.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID b4	SampTy	pe: MBLK	Tes	tCode: EPA	Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: R8173	F	RunNo: 817	3				
Prep Date:	Analysis Da	ile: 1/21/2013	;	SeqNo: <b>236</b>	377	Units: µg/L			
Analyte	Result	PQL SPK value	SPK Ref Val	%REC L	.owLimit	HighLimit	%RPD	RPDLimit	Qual
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							
Isopropyibenzene	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	NĐ	2.0							
Tetrachloroethene (PCE)	ND	1.0							
trans-1,2-DCE	ND	1.0							
trans-1,3-Dichloropropene	ND	1.0							
1,2,3-Trichlorobenzene	ND	1.0							
1,2,4-Trichlorobenzene	ND	1.0							
1,1,1-Trichloroethane	ND	1.0							
1,1,2-Trichloroethane	ND	1.0							
Trichloroethene (TCE)	ND	1.0							
Trichlorofluoromethane	ND	1.0							
1,2,3-Trichloropropane	ND	2.0							
Vinyl chloride	ND	1.0							
Xylenes, Total	ND	1,5							
Surr: 1,2-Dichloroethane-d4	8.8	10.0	0	87.7	70	130			
Surr: 4-Bromofluorobenzene	9.1	10.0	0	91.0	69.5	130			
Surr: Dibromofluoromethane	9.4	10.0	0	93.9	70	130			
Sum: Toluene-d8	9.3	10.0	0	92,9	70	130			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID 100ng lcs2	SampT	ype: LC	S	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batcl	n ID: R8	173	F	RunNo: 8173					
Prep Date:	Analysis D	)ate: 1/	22/2013	5	SeqNo: 236379		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.2	70	130			
Toluene	19	1.0	20.00	0	96.2	80	120			
Chlorobenzene	19	1.0	20.00	0	95.5	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	73.7	122			
Frichloroethene (TCE)	18	1.0	20.00	0	91.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.4	70	130			
Surr. 4-Bromofluorobenzene	9.2		10.00		92.2	69.5	130			
Surr. Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	9.2		10.00		91.8	70	130			

Sample ID 1301596-008a ms	SampT	ype: MS	3	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: GBR-50	Batch	ID: R8	173	F	RunNo: 8	173				
Prep Date:	Analysis D	ate: 1/	22/2013	8	SeqNo: 2	36388	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.7	70	130			
Toluene	19	1.0	20.00	0	93.6	68.5	128			
Chlorobenzene	19	1.0	20.00	0	96.5	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	88.4	61.3	102			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.8	70	130			
Surr: 4-Bromoffuorobenzene	8.8		10.00		88.5	69.5	130			
Surr: Dibromofluoromethane	9.5		10.00		94.5	70	130			
Surr; Toluene-d8	9.0		10.00		90.1	70	130			

Sample ID 1301596-008a m	ısd SampT	ype: M	SD	Tes	(Code: E	PA Method	8260B: VOL	ATILES			
Client ID: GBR-50	Batch	ID: R8	173	F	RunNo: 8	173					
Prep Date:	Analysis D	ate: 1/	22/2013	\$	SeqNo: 2	36390	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	19	1.0	20.00	0	95.5	70	130	1.21	20		
Toluene	19	1.0	20.00	0	92.7	68.5	128	1.03	20		
Chlorobenzene	19	1.0	20.00	0	94.3	70	130	2.34	20		
1,1-Dichloroethene	21	1.0	20.00	0	107	70	130	4.32	20		
Trichloroethene (TCE)	18	1.0	20.00	0	88.3	61.3	102	0.108	20		
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.4	70	130	0	0		
Surr: 4-Bromofluorobenzene	9.1		10.00		91.0	69.5	130	0	0		
Surr: Dibromofluoromethane	9.2		10.00		92.3	70	130	0	0		
Surr Toluene-d8	9.0		10.00		90.5	70	130	0	n		

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID mb-5749	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8270C: PAHs			
Client ID: PBW	Batch	1D: 574	49	F	RunNo: 8	227				
Prep Date: 1/21/2013	Analysis D	ate: 1/	23/2013	S	SeqNo: 2	37632	Units: µ <b>g/</b> 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	0.75								
Fluoranthene	ND	0.75								
Рутепе	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	0.75								
Benzo(g.h.i)perylene	ND	0.75								
Indeno(1,2,3-cd)pyrene	ND	1.0								
Surr: Benzo(e)pyrene	16		20.00		79.4	38	145			
Surr: N-hexadecane	69		87.60		78.9	40	107			

Sample ID Ics-5749	SampT	ype: LC	S	Test	Code: EF	A Method	8270C: PAHs			
Client ID: LCSW	Batch	ID: 574	49	R	tunNo: 82	227				
Prep Date: 1/21/2013	Analysis D	ate: 1/	23/2013	S	ieqNo: 2	37633	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	18	0.50	20.00	0	91.2	33.9	106			
1-Methylnaphthalene	18	0.50	20.00	0	90.3	36.3	111			
2-Methylnaphthalene	18	0.50	20.00	0	89.7	36.5	105			
Acenaphthylene	20	0.50	20.00	0	97.8	28.4	122			
Acenaphthene	21	0.50	20.00	0	103	32.7	118			
Fluorene	20	0.50	20.00	0	99.2	39.1	119			
Phenanthrene	21	0.50	20.00	0	105	47.1	119			
Anthracene	21	0.75	20.00	0	106	51.1	117			
Fluoranthene	22	0.75	20.00	0	108	40	132			
Pyrene	20	0.50	20.00	0	99.9	43.9	123			
Benz(a)anthracene	23	0.50	20.00	0	115	35	163			
Chrysene	21	0.50	20.00	0	104	45.9	119			
Benzo(b)fluoranthene	19	0.50	20.00	0	97,3	36.5	137			
Benzo(k)fluoranthene	22	0.50	20,00	0	108	37,1	143			
Benzo(a)pyrene	20	0.50	20.00	0	98.5	26.7	144			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#-

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Project: GBK	Annuai Sampi	ling						T III		
Sample ID Ics-5749	SampT	ype: LC	S	Tes	stCode: E	PA Method	8270C: PAHs			Aut -
Client ID: LCSW	Batch	ID: 57	49	1	RunNo: 8	227				
Prep Date: 1/21/2013	Analysis D	ate: 1/	23/2013		SeqNo: 2	37633	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	20	0.75	20.00	0	102	31	146			
Benzo(g,h,i)perylene	20	0.75	20.00	0	102	30.9	150			
Indeno(1,2,3-cd)pyrene	20	1.0	20.00	0	102	35.2	169			
Surr: Benzo(e)pyrene	15		20.00		74.2	38	145			
Surr: N-hexadecane	60		87.60		69.1	40	107			
Sample ID lcsd-5749	SampT	ype: LC	SD	Tes	stCode: E	PA Method	8270C: PAHs			
Client ID: LCSS02	Batch	ID: <b>57</b> 4	49	f	RunNo: 8	227				
Prep Date: 1/21/2013	Analysis D	ate: 1/	23/2013	:	SeqNo: 2	37634	Units:: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	19	0.50	20.00	0	95.8	33,9	106	4.92	20	
1-Methylnaphthalene	20	0.50	20.00	0	99.7	36,3	111	9.89	20	
2-Methylnaphthalene	19	0.50	20.00	0	97.2	36.5	105	8.03	20	
Acenaphthylene	22	0.50	20.00	0	110	28.4	122	11.3	20	
Acenaphthene	21	0.50	20.00	0	105	32.7	118	1.92	20	
Fluorene	20	0.50	20.00	0	102	39.1	119	2,98	20	
Phenanthrene	22	0.50	20.00	0	108	47.1	119	3.28	20	
Anthracene	22	0.75	20.00	0	112	51.1	117	4.68	20	
Fluoranthene	24	0.75	20.00	0	122	40	132	12.2	20	
Pyrene	20	0.50	20.00	0	101	43.9	123	1.29	20	
Benz(a)anthracene	20	0.50	20.00	0	102	35	163	12.4	20	
Chrysene	20	0.50	20.00	0	102	45.9	119	1.95	20	
Benzo(b)fluoranthene	21	0.50	20.00	0	103	36,5	137	5.59	20	
Benzo(k)fluoranthene	22	0.50	20.00	0	108	37.1	143	0.277	20	
Benzo(a)pyrene	21	0.50	20.00	0	103	26,7	144	4.76	20	
Dibenz(a,h)anthracene	21	0.75	20.00	0	105	31	146	2.81	20	
Benzo(g h,i)perylene	23	0.75	20.00	0	113	30.9	150	10.1	20	
Indeno(1,2,3-cd)pyrene	22	1.0	20.00	0	109	35.2	169	7.39	20	
Surr: Benzo(e)pyrene	12		20.00		59.1	38	145	0	0	
- William 1										

#### Qualifiers:

Surr: N-hexadecane

Value exceeds Maximum Contaminant Level.

46

87.60

- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

52.2

40

107

R RPD outside accepted recovery limits

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0

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

**Client:** 

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 1301596-004b dup

SampType: DUP

TestCode: EPA 120.1: Specific Conductance

Client ID:

**GRW-6** 

Batch ID: R8178

RunNo: 8178

Prep Date:

Analysis Date: 1/21/2013

0.010

SeqNo: 236567

Units: µmhos/cm

Analyte Conductivity Result 3500 PQL SPK value SPK Ref Val

%REC LowLimit

**HighLimit** 

%RPD **RPDLimit** 

0.459

Qual

20

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

P Sample pH greater than 2

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID 1301596-004b dup

SampType: DUP

TestCode: SM4500-H+B: pH

Client ID: **GRW-6** 

Batch ID: R8178

RunNo: 8178

SPK value SPK Ref Val %REC LowLimit

Prep Date:

Analysis Date: 1/21/2013

SeqNo: 236578

**HighLimit** 

Units: pH units

%RPD

**RPDLimit** 

Qual

Analyte

Result PQL 7.46 1.68

Н

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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#### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596

29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sami	nla	in	mb-1
Sam	ple	ישו	mp-3

SampType: MBLK

TestCode: SM2320B: Alkalinity

Batch ID: R8178

RunNo: 8178

Client ID: Prep Date:

Analysis Date: 1/21/2013

SeqNo: 236543

Units: mg/L CaCO3

Analyte

SPK value SPK Ref Val **PQL** 

%REC LowLimit

Qual

Total Alkalinity (as CaCO3)

PRW

ND 20

HighLimit %RPD

Sample ID Ics-1

SampType: LCS

Result

Result

Result

ND

80

Batch ID: R8178

POL

TestCode: SM2320B: Alkalinity **RunNo: 8178** 

Prep Date:

Client ID: LCSW

Analysis Date: 1/21/2013

SeqNo: 236544

Units: mg/L CaCO3

Qual

Analyte Total Alkalinity (as CaCO3)

20 79

%REC SPK value SPK Ref Val 80.00

98.4

HighLimit 110 **RPDLimit** 

**RPDLimit** 

Sample ID mb-1

Client ID: PBW

SampType: MBLK

TestCode: SM2320B: Alkalinity RunNo: 8200

%RPD

Prep Date: Analyte

Batch ID: R8200 Analysis Date: 1/22/2013

SeqNo: 237229

LowLimit

LowElmit

Units: mg/L CaCO3 HighLimit %RPD

**RPDLimit** 

Total Alkalinity (as CaCO3)

ND

**PQL** SPK value SPK Ref Val %REC 20

Qual

Client ID: LCSW

Sample ID Ics-1

SampType: LCS

Batch ID: R8200

PQL

TestCode: SM2320B: Alkalinity

RunNo: 8200

110

HighLimit

%RPD

%RPD

Prep Date: Analyte

Analysis Date: 1/22/2013

SeqNo: 237230

Units: mg/L CaCO3

**RPDLimit** Qual

Total Alkalinity (as CaCO3)

%REC 98.0

TestCode: SM2320B: Alkalinity

LowLimit

LowLimit

Prep Date:

Sample ID mb-2 Client ID: PBW

SampType: MBLK Batch ID: R8200

RunNo: 8200

Analysis Date: 1/22/2013

SampType: LCS

SeqNo: 237249

Units: mg/L CaCO3

HighLimit

**RPDLimit** 

Analyte

Total Alkalinity (as CaCO3)

Sample ID Ics-2

Client ID: LCSW

PQL 20 SPK value SPK Ref Val %REC

SPK value SPK Ref Val

80.00

TestCode: SM2320B: Alkalinity

100

Qual

SeqNo: 237250

RunNo: 8200

Units: mg/L CaCO3

110

Analyte

Prep Date:

Total Alkalinity (as CaCO3)

Result PQL

20

Batch ID: R8200

Analysis Date: 1/22/2013

SPK value SPK Ref Val

80.00

%REC LowLimit

HighLimit

%RPD

**RPDLimit** 

Qual

Qualifiers: Value exceeds Maximum Contaminant Level,

Analyte detected below quantitation limits

E Value above quantitation range

Sample pH greater than 2

- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded ND
- Page 51 of 52
- Not Detected at the Reporting Limit RPD outside accepted recovery limits

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301596 29-Jan-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID MB-5752

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW

Batch ID: 5752

RunNo: 8201

Prep Date: 1/21/2013

Analysis Date: 1/23/2013

**PQL** 

20.0

SeqNo: 237308

Units: mg/L

Analyte

Result ND SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

**RPDLimit** 

Qual

Total Dissolved Solids

Client ID: LCSW

Sample ID LCS-5752

Prep Date: 1/21/2013

SampType: LCS Batch ID: 5752

Analysis Date: 1/23/2013

TestCode: SM2540C MOD: Total Dissolved Solids RunNo: 8201

Units: mg/L

**RPDLimit** 

Qual

Analyte

Result PQL

1000

0

%REC 102

SeqNo: 237309

80

LowLimit

HighLimit

%RPD

Total Dissolved Solids

1020

20.0

SPK value SPK Ref Val

120

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

Sample pH greater than 2

В Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits

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Hall Environmental Analysis Laborator) 4901 Hawkins NE Albuquerque, NM 87105

TEL: 505-345-3975 FAX: 505-345-410; Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: Western Refining Southwest, Inc Bloomfield We	ork Order Number: 1301596
Received by/date: 01 /15 /13	
Logged By: Lindsay Mangin 1/18/2013 9:53:00 AM	- 4/1/400
Completed By: Lindsay Mangin 1/18/2013 10: 15:18 AM	J. G.
Reviewed By:	
Chain of Custody	
1. Were seals intact?	Yes No Not Present
2. Is Chain of Custody complete?	Yes 🗹 No 🗌 Not Present 🗌
3. How was the sample delivered?	Courier
Log In	
4. Coolers are present? (see 19. for cooler specific information)	Yes 🗹 No 🗌 NA 🗔
5. Was an attempt made to cool the samples?	Yes 🗹 No 🗆 NA 🗆
6. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑ No □ NA □
O. Anote an settings received of a retribution of Set of more of	100 120 110
7. Sample(s) in proper container(s)?	Yes 🗹 No 🗀
8. Sufficient sample volume for indicated test(s)?	Yes 🗹 No 🗋
<ol><li>Are samples (except VOA and ONG) properly preserved?</li></ol>	Yes 🗹 No 🗌
10. Was preservative added to bottles?	Yes No 🗹 NA 🗌
11, VOA viale have zero headspace?	Mes V No No VOA Vials
12. Were any sample containers received broken?	Yes V No
13. Does paperwork match bottle labels?	Yes ☑ No ☐ # of preserved bottles checked 2 2
(Note discrepancies on chain of custody)	for pH:
14. Are matrices correctly identified on Chain of Custody?	Yes ✓ No ☐ (£2 of >12 unless noted)
15. Is it clear what analyses were requested?	Yes No Adjusted?
16. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑ No ☐ Checked by:
Special Handling (if applicable)	
17. Was client notified of all discrepancies with this order?	Yes No No NA 🗹
Person Notified: Date:	
By Whom: Via:	eMail Phone Fax In Person
Regarding:	
Client Instructions:	
18. Additional remarks: -001A - TELP RIANK RECIENTS BROKEN	- Noilals
19. Cooler Information Cooler No Temp C Condition Seal Intact Seal No S	Sea Date   Signed By
1 1.0 Good Yes	

	ORY						200000	(N)	□ <b>八</b> )	Air Bubbles	/			16										Kaladis
FRANCOTVIA	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	EDB (Method 504.1)  PAH's (8310 or 8270 SIMS)  RCRA 8 Metals  Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )  8081 Pesticides / 8082 PCB's  8081 Pesticides / 8082 PCB's			/	>	<u> </u>			>	3	2	1 /2	7	2	7	email results to	Date Time OOOGE/® Henv. Com  S 0955 TPJP Kr. MK PERICE/PN S REVIEW Instance on the presidition. Any sub-contracted data will be dearly notated on the analytical moon.		
			4901 Hav	Tel. 505-		( <b>⁄</b> lu	o 889)	HGT -	(GE	TEX + MTI TM + X3TE B3108 H9T odb9M) H9T													Remarks: Please	OOOG TELP KL
			Annual Sampling	•				าตุพลทา			700-	-m3.	-00H	-005	-m6	-603-	-00K	-009	010	170-	-012	-013	Date Time  /h/3/54/	Date Time S 0955
Time:	□ Rush					ger.	y Ager	Devin Her		Preservative Type	Varios	Verions	טשי, מאט	Various	Varion	V2.1.35	Val. 34	Var. 005	Vario15	42/1/2	VACTOR	Various	1 2019	ST 10
Turn-Around Time:	X Standard	Project Name	GBR	Project #:		Project Manager.	Ashley	Sampler: De		Container Type and #	8	. 3	۵	<u>~</u>	7	2	7	7	7	7	Š	Ø	Received by:	Received by:
Chain-of-Custody Record	Robinson	Refining	Ξ	Sie Jd. NM 87413			☐ Level 4 (Full Validation)	□ Other		Matrix Sample Request ID	6W (BR-24D	6W 6BR-30	60 GRW-6	60 GRV-3	64 6BR-51	GW 60R-52	GW GBR. 50	60 6BR-48	60 6BR-32	6V 6BR-49	6w 6B R -17	6W GBR-31	Refinquished by:	Received Received August With the Received Recei
Chain-c	Client Kelly	Western	Mailing Address:	Aloumbe	Phone #:	email or Fax#:	OA/QC Package:	_	□ EDD (Type)	-	_	115/13 1400	115/13 1450 (	1/15/13 1533 (	1/16/13 11 35 (	1/16/13 1300 (	1/16/13 14057 (	1/16/13 1435	1/16/13  520	1116/13 1551	1/17/13 1153	1/17/18/13/9/	Date: Time: R	Date: Time: Re 1/1//3 [7] /

TABLE 1

#### 2012 SAMPLING SCHEDULE FORMER GIANT BLOOMFIELD REFINERY WESTERN REFINING

Sample ID	ANNUALLY (Jan)	Notes:
	Marian Maria	VOC
-Cyclege from Piller		method 8260
	Vol	1
	OWC	PAH
- Sylvan - Minerally	METALS	method 8270
	-PAH	]
	VOC	GWC
GRW-3	GWC ·	pН
	PAH	EC
	VOC	TDS '
GRW-6	GWC .	<b>alkalinity</b>
	PAH	hardness
	VOC	anions
GBR-17	GWC -	bromide
	РАН	chloride
	VOC	sulfate
GBR-24D	GWC	fluoride
	PAH	nitrate/nitrite
	VOC	phosporus
GBR-30	GWC	cations
	PAH	calcium
	VOC	iron
GBR-31	GWC ⋅	magnesium
	РАН	паприлезе
	VOÇ	potassium
GBR-32	GWC	sodium
	METALS	
	VOC	Metals
GBR-48	GWC ·	barium
	METALS	beryllium
	VOC	cadmium
GBR-49	GWC.	chromium
	METALS	copper
	VOC	lead
GBR-S0	GWC-	nickel
	METALS	silver
	VOC,	zinc
GBR-51	GWC	antimony
	VOC	arsenic
GBR-52	GWC.	selenium
		thallium
		mercury





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

February 14, 2013

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX (505) 632-3911

RE: GBR Annual Sampling

OrderNo.: 1301846

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/25/2013 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 06, 2013.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 1301846

Date Reported: 2/14/2013

## Hall Environmental Analysis Laboratory, Inc.

Matrix: AQUEOUS

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** 

1301846-002

Project:

Lab ID:

**Client Sample ID: SHS-8** 

Collection Date: 1/24/2013 2:26:00 PM Received Date: 1/25/2013 10:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	1.3	0.10000	0.50		mg/L	5	1/25/2013 11:39:40 PM
Chloride	120	1.32400	10		mg/L	20	1/25/2013 11:52:05 PM
Nitrogen, Nitrite (As N)	ND	0.07400	0.50		mg/L	5	1/25/2013 11:39:40 PM
Bromide	0.48	0.38050	0.50	J	mg/L	5	1/25/2013 11:39:40 PM
Nitrogen, Nitrate (As N)	0.19	0.11300	0.50	J	mg/L	5	1/25/2013 11:39:40 PM
Phosphorus, Orthophosphate (As P)	ND	0.46150	2.5		mg/L	5	1/25/2013 11:39:40 PM
Sulfate	770	4.66600	10	*	mg/L	20	1/25/2013 11:52:05 PM
EPA METHOD 200.7: METALS							Analyst: ELS
Barium	2.2	0.00500	0.010		mg/L	5	1/30/2013 4:50:50 PM
Beryllium	0.0067	0.00060	0.0020	•	mg/L	1	1/30/2013 2:17:23 PM
Cadmium	0.0011	0.00060	0.0020	J	mg/L	1	1/30/2013 2:17:23 PM
Calcium	190	0.12950	5.0		mg/L	5	1/30/2013 4:50:50 PM
Chromium	0.099	0.00100	0.0060		mg/L	1	1/30/2013 2:17:23 PM
Iron	100	6.65000	10	•	mg/L	500	1/30/2013 5:29:10 PM
Magnesium	36	0.06300	1.0		mg/L	1	1/30/2013 2:17:23 PM
Manganese	4.7	0.00300	0.010		mg/L	5	1/30/2013 4:50:50 PM
Nickel	0.13	0.00130	0.010		mg/L	1	1/30/2013 2:17:23 PM
Potassium	12	0.48090	1.0		mg/L	1	1/30/2013 2:17:23 PM
Silver	ND	0.00370	0.0050		mg/L	1	1/30/2013 2:17:23 PM
Sodium	470	1.07750	5.0		mg/L	5	1/30/2013 4:50:50 PM
Zinc	0.36	0.00110	0.010		mg/L	1	1/30/2013 2:17:23 PM
EPA 200.8: METALS							Analyst: DBD
Antimony	0.00065	0.00058	0.0025	J	mg/L	2.5	1/30/2013 1:02:45 PM
Arsenic	0.025	0.00143	0.0025	*	mg/L	2.5	1/30/2013 1:02:45 PM
Lead	0.36	0.00080	0.010	*	mg/L	10	1/30/2013 1:31:46 PM
Copper	0.19	0.00080	0.0050		mg/L	5	1/30/2013 1:22:24 PM
Selenium	0.0029	0.00250	0.0025		mg/L	2.5	1/30/2013 1:02:45 PM
Thallium	0.0014	0.00007	0.0025	J	mg/L	2.5	1/30/2013 1:02:45 PM
EPA METHOD 245.1: MERCURY							Analyst: TMG
Mercury	ND	0.00009	0.00020		mg/L	1	1/30/2013 1:16:21 PM
SM2340B: HARDNESS							Analyst: ELS
Hardness (As CaCO3)	630	1.00000	6.6		mg/L	1	1/30/2013 7:43:00 AM
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	3.98621	10		μg/L	10	1/29/2013 6:29:25 PM
Toluene	ND	4.73092	10		µg/L	10	1/29/2013 6:29:25 PM
Ethylbenzene	ND	3.81531	10		µg/L	10	1/29/2013 6:29:25 PM
Methyl tert-butyl ether (MTBE)	ND	9.62292	10		µg/L	10	1/29/2013 6:29:25 PM
1,2,4-Trimethylbenzene	ND	4.66690	10		µg/L	10	1/29/2013 6:29:25 PM
1,3,5-Trimethylbenzene	ND	3.75595	10		μg/L	10	1/29/2013 6:29 25 PM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- I Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

## Hall Environmental Analysis Laboratory, Inc.

Matrix: AQUEOUS

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** 

Lab ID: 1301846-002

Project:

**Client Sample ID: SHS-8** 

Collection Date: 1/24/2013 2:26:00 PM Received Date: 1/25/2013 10:00:00 AM

Analyses	Mary Transaction of	Result	MDL	RL	Qual	Units	DF	Date Analyzed	
EPA METHO	D 8260B: VOLATILES							Analyst: DJF	-01
1,2-Dichloro	ethane (EDC)	ND	2.86934	10		µg/L	10	1/29/2013 6:29:25 PM	
1,2-Dibromo	ethane (ED8)	ND	3.76265	10		μg/L	10	1/29/2013 6:29:25 PM	
Naphthalene	Later III	ND	3.71770	20		μg/L	10	1/29/2013 6:29:25 PM	
1-Methylnap	hthalene	28	7.17240	40	J	μg/L	10	1/29/2013 6:29:25 PM	
2-Methylnap	hthalene	7.3	5.98454	40	J	μg/L	10	1/29/2013 6:29:25 PM	
Acetone		35	15.03885	100	J	μg/L	10	1/29/2013 6:29:25 PM	
Bromobenze	ene	ND	6.28735	10		μg/L	10	1/29/2013 6:29:25 PM	
Bromodichlo	romethane	ND	3.39929	10		μg/L	10	1/29/2013 6:29:25 PM	
Bromoform		ND	4.31761	10		μg/L	10	1/29/2013 6 29:25 PM	
Bromometha	ine	ND	5.58029	30		μg/L	10	1/29/2013 6:29:25 PM	
2-Butanone		ND	22.44666	100		μg/L	10	1/29/2013 6:29:25 PM	
Carbon disu	fide	ND	8.35110	100		μg/L	10	1/29/2013 6:29:25 PM	
Carbon Tetra	achloride	ND	3.65769	10		μg/L	10	1/29/2013 6 29 25 PM	
Chlorobenze	ne	ND	3.89653	10		μg/L	10	1/29/2013 6 29 25 PM	
Chloroethan	8	ND	4.42414	20		μg/L	10	1/29/2013 6 29 25 PM	
Chloroform		ND	3.53710	10		μg/L	10	1/29/2013 6 29 25 PM	
Chlorometha	ine	ND	6.51545	30		μg/L	10	1/29/2013 6:29:25 PM	
2-Chlorotolu	ene	ND	5.33617	10		μg/L	10	1/29/2013 6:29:25 PM	
4-Chlorotolu	ene	ND	4.14023	10		μg/L	10	1/29/2013 6:29:25 PM	
cis-1,2-DCE		ND	3.43882	10		μg/L	10	1/29/2013 6:29:25 PM	
cis-1,3-Dichi	oropropene	ND	5,65943	10		μg/L	10	1/29/2013 6:29:25 PM	
1,2-Dibromo	-3-chloropropane	ND	7.70171	20		μg/L	10	1/29/2013 6:29:25 PM	
Dibromochlo	romethane	ND	3.21598	10		μg/L	10	1/29/2013 6:29:25 PM	
Dibromomet	hane	ND	6.51040	10		μg/L	10	1/29/2013 6:29:25 PM	
1,2-Dichloro	релиене	ND	4.65522	10		μg/L	10	1/29/2013 6:29:25 PM	
1,3-Dichloro	penzene	ND	4.72508	10		μg/L	10	1/29/2013 6:29:25 PM	
1,4-Dichloro	реплене	ND	4.27877	10		µg/L	10	1/29/2013 6:29:25 PM	
Dichlorodiflu	oromethane	ND	9.76454	10		μg/L	10	1/29/2013 6 29 25 PM	
1,1-Dichloro	ethane	ND	2.97747	10		μg/L	10	1/29/2013 6:29:25 PM	
1,1-Dichloro	ethene	ND	3.80658	10		μg/L	10	1/29/2013 6:29:25 PM	
1,2-Dichloro		ND	3.87410	10		μg/L	10	1/29/2013 6:29:25 PM	
1,3-Dichloro	,	ND	5.27837	10		μg/L	10	1/29/2013 6:29:25 PM	
2,2-Dichloro	propane	ND	4.69766	20		μg/L	10	1/29/2013 6:29:25 PM	
1,1-Dichloro		ND	3.70910	10		μg/L	10	1/29/2013 6:29:25 PM	
Hexachlorob	utadiene	ND	5.45330	10		μg/L	10	1/29/2013 6:29:25 PM	
2-Hexanone		ND	8.91279	100		μg/L	10	1/29/2013 6:29:25 PM	
Isopropylber	zene	ND	4.62196	10		μg/L	10	1/29/2013 6:29:25 PM	
4-Isopropylte		ND	4.92443	10		μg/L	10	1/29/2013 6 29:25 PM	
4-Methyl-2-p		ND	9.78599	100		μg/L	10	1/29/2013 6 29 25 PM	
Methylene C		ND	3,51424	30		μg/L	10	1/29/2013 6 29:25 PM	
n-Butylbenzi		ND	3,98806	30		μg/L	10	1/29/2013 6:29:25 PM	
n-Propylben		6.1	4.00606	10	J	μg/L	10	1/29/2013 6:29:25 PM	

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 2 of 14

### **Analytical Report** Lab Order 1301846

Date Reported: 2/14/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**Client Sample ID: SHS-8** Collection Date: 1/24/2013 2:26:00 PM

**GBR Annual Sampling** Project:

Lab ID: 1301846-002 Matrix: AQUEOUS Received Date: 1/25/2013 10:00:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
sec-Butylbenzene	ND	4.66904	10		µg/L	10	1/29/2013 6:29:25 PM	
Styrene	ND	4.07627	10		μg/L	10	1/29/2013 6:29:25 PM	
tert-Butylbenzene	ND	4.17755	10		μg/L	10	1/29/2013 6:29:25 PM	
1,1,1,2-Tetrachloroethane	ND	4.85436	10		μg/L	10	1/29/2013 6:29:25 PM	
1,1,2,2-Tetrachloroethane	ND	6.16409	20		μg/L	10	1/29/2013 6:29:25 PM	
Tetrachloroethene (PCE)	ND	4.74061	10		µg/L	10	1/29/2013 6:29:25 PM	
trans-1,2-DCE	ND	3.23185	10		µg/L	10	1/29/2013 6:29:25 PM	
trans-1,3-Dichloropropene	ND	6.42924	10		μg/L	10	1/29/2013 6:29:25 PM	
1,2,3-Trichlorobenzene	ND	4.96307	10		μg/L	10	1/29/2013 6:29:25 PM	
1,2,4-Trichlorobenzene	ND	4.28873	10		μg/L	10	1/29/2013 6:29:25 PM	
1,1,1-Trichloroethane	ND	3.84172	10		μg/L	10	1/29/2013 6:29:25 PM	
1,1,2-Trichloroethane	ND	5.39346	10		µg/L	10	1/29/2013 6:29:25 PM	
Trichloroethene (TCE)	ND	3.00539	10		μg/L	10	1/29/2013 6:29:25 PM	
Trichlorofluoromethane	ND	3,54465	10		µg/L	10	1/29/2013 6:29;25 PM	
1,2,3-Trichloropropane	ND	6.13056	20		μg/L	10	1/29/2013 6:29:25 PM	
Vinyl chloride	ND	4.77468	10		µg/L	10	1/29/2013 6:29:25 PM	
Xylenes, Total	ND	12,73654	15		µg/L	10	1/29/2013 6:29:25 PM	
Surr: 1,2-Dichloroethane-d4	75.9	0.00000	70-130		%REC	10	1/29/2013 6:29:25 PM	
Surr: 4-Bromofluorobenzene	87.2	0.00000			%REC	10	1/29/2013 6:29:25 PM	
Surr: Dibromofluoromethane	84.7	0.00000	70-130		%REC	10	1/29/2013 6:29:25 PM	
Surr: Toluene-d8	103	0.00000	70-130		%REC	10	1/29/2013 6:29:25 PM	
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>							Analyst: JML	
Conductivity	2600	0.01000	0.010		µmhos/cm	1	1/28/2013 11:56:58 AM	
SM4500-H+B: PH							Analyst: JML	
pH	7.05	0.10000	1.68	Н	pH units	1	1/28/2013 11:56:58 AM	
SM2320B: ALKALINITY							Analyst: JML	
Bicarbonate (As CaCO3)	710	5.00000	20		mg/L CaCO3	1	1/28/2013 11:56:58 AM	
Carbonate (As CaCO3)	ND	2.00000	2.0		mg/L CaCO3	1	1/28/2013 11:56:58 AM	
Total Alkalinity (as CaCO3)	710	5.00000	20		mg/L CaCO3	1	1/28/2013 11:56:58 AM	
SM2540C MOD: TOTAL DISSOLVED SO	LIDS						Analyst: KS	
Total Dissolved Solids	1800	100.55600	200	*	mg/L	1	1/29/2013 3:04:00 PM	

Oun	124	٠	
T. PUR		w	

- Value exceeds Maximum Contaminant Level,
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 3 of 14

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846 *14-Feb-13* 

Client:

Western Refining Southwest, Inc.

GBR Annual Sampling

Project:	GBR	Annual Samp	oling								
Sample ID	MB-5880	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	200.7: Metal:	S		
Client ID:	PBW	Bato	:h ID: 58	80	F	RunNo: 8	350				
Prep Date:	1/29/2013	Analysis	Date: 1/	30/2013		SeqNo: 2	41011	Units: mg/L			
Алаlyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.0020	0.11.10.00	OF IVINOI Var	701120	CONTENNE	riigiiciiiii	70111 13	TO DEMINE	
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								
Nickel		ND	0.010								
Potassium		ND	1.0								
Silver		ND	0.0050								
Sodium		ND	1.0								
Zinc	. <u>.</u> .	ND	0.010								
Sample ID	LCS-5880	Samp	Type: LC	s	Tes	tCode: El	PA Method	200.7: Metals			
Client ID:	LCSW	Bato	h ID: 58	80	F	lunNo: 8	350				
Prep Date:	1/29/2013	Analysis	Date: 1/	30/2013	S	eqNo: 2	41014	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	95.9	85	115			
Beryllium		0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium		0.49	0.0020	0.5000	0	97.4	85	115			
Calcium		47	1.0	50.00	0	94.7	85	115			
Chromium		0.48	0.0060	0.5000	0	95.3	85	115			
Iron		0.47	0.020	0.5000	0	93.9	85	115			
Magnesium		48	1.0	50.00	0	96.4	85	115			
Manganese		0.47	0.0020	0.5000	0	94.2	85	115			
Nickel		0.46	0.010	0.5000	0	91.5	85	115			
Potassium		47	1.0	50.00	0	93.6	85	115			
Silver		0.092	0.0050	0.1000	0	91.5	85	115			

0

0

95.2

93.8

85

85

115

115

#### Qualifiers:

Sodium

Zinc

\* Value exceeds Maximum Contaminant Level.

48

0.47

1.0

0.010

50.00

0.5000

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 4 of 14

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

Client:

Western Refining Southwest, Inc.

0.0025

0.0025

ND

ND

**Project:** 

Selenium

Thallium

**GBR Annual Sampling** 

Sample ID LLLCS-5880	SampType: LCSLL	TestCode: EPA 200.8: M	letals	
Client ID: BatchQC	Batch ID: 5880	RunNo: 8349		
Prep Date: 1/29/2013	Analysis Date: 1/30/2013	SeqNo: 240977	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD I	RPDLimit Qual
Antimony	0.052 0.0025 0.05000	0 103 85	115	·
Arsenic	0.050 0.0025 0.05000	0 100 85	115	
Lead	0.050 0.0025 0.05000	0 99.7 85	115	
Copper	0.049 0.0025 0.05000	0 97.1 85	115	
Selenium	0.054 0.0025 0.05000	0 108 85	115	
Thallum	0.050 0.0025 0.05000	0 100 85	115	
Sample ID MB-5880	SampType: MBLK	TestCode: EPA 200.8: N	letais	
Client ID: PBW	Batch ID: 5880	RunNo: 8349		
Prep Date: 1/29/2013	Analysis Date: 1/30/2013	SeqNo: 240979	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Antimony	ND 0.0025	-		
Arsenic	ND 0.0025			
Lead	ND 0.0025			
Copper	ND 0.0025			

### Qualifiers:

- Value exceeds Maximum Contaminant Level,
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

B Analyte detected in the associated Method Blank

RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 5 of 14

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID MB-5901

SampType: MBLK

TestCode: EPA Method 245.1: Mercury

Client ID: PBW

Batch ID: 5901

RunNo: 8347 SeqNo: 240926

Prep Date: 1/30/2013 Analysis Date: 1/30/2013

SPK value SPK Ref Val %REC LowLimit

0

Units: mg/L

HighLimit

**RPDLimit** 

Analyte Mercury

PQL ND 0.00020

Sample ID LCS-5901

SampType: LCS

TestCode: EPA Method 245.1: Mercury

Client ID: LCSW Batch ID: 5901

RunNo: 8347

Prep Date: 1/30/2013 Analysis Date: 1/30/2013

SeqNo: 240927

Units: mg/L

Analyte

SPK value SPK Ref Val

%REC 92.6 HighLimit

%RPD

%RPD

Mercury

0.0046 0.00020 0.005000

80 120 **RPDLimit** 

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

Sample pH greater than 2

Analyte detected in the associated Method Blank В

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

R

Page 6 of 14

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID MB	SampType: MBLK		Tes	(Code: El	A Method					
Client ID: PBW	Batch	ID: R8	292	F	RunNo: 8	292				
Prep Date:	Analysis D	ate: 1/	25/2013	5	SeqNo: 2	39498	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								
Sulfate	ND	0.50								

Sample ID LCS-b	Sampl	ype: LC	\$	Tes	(Code: El	5				
Client ID: LCSW	Batc	ID: R8	292	F	RunNo: 8	292				
Prep Date:	Analysis [	)ate: 1/	25/2013	5	SeqNo: 2	39500	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	90	110			
Chloride	5.1	0.50	5.000	0	102	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	102	90	110			
Bromide	2.6	0.10	2,500	0	104	90	110			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0	108	90	110			
Phosphorus, Orthophosphate (As P	5.4	0.50	5.000	0	108	90	110			
Sulfate	10	0.50	10.00	0	102	90	110			

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sur: DNOP		1.1		1.000		106	75.4	146			
Notor Oil Range Org	anics (MRO)	ND	5.0								
Diesel Range Organ	ics (DRO)	ND	1.0							100	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Prep Date: 1/2	25/2013	Analysis D	ate: 1/	25/2013	5	eqNo: 2	39356	Units: mg/L			
Client ID: PBV	N	Batch	ID: 58	48	F	lunNo: 8	285				
Sample ID MB-5848		SampT	ype: ME	BLK	Tes						

Complete Edd-0040	- comp	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,	1000C. E.	Amounda	00100.0103	ai i taii ge			- 1
Client ID: LCSW	Batch	ID: 58	48	F	RunNo: 8	285					
Prep Date: 1/25/2013	Analysis D	ate: 1/	25/2013	8	SeqNo: 2	39357	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	6.0	1.0	5.000	0	120	64.4	132				
Surr: DNOP	0.57		0.5000		113	75.4	146				

Sample ID LCSD-5848	Samply	/pe: LC	SD	Tes	tCode: El	PA Method	8015B: Diese	I Range		
Client ID: LCSS02	Batch	ID: 58	48	F	RunNo: 8	285				
Prep Date: 1/25/2013	Analysis Da	ite: 1/	25/2013	S	eqNo: 2	39358	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.5	1.0	5.000	0	129	64.4	132	7.58	20	
Surr: DNOP	0.58		0.5000		116	75.4	146	0	0	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

ie	

Western Refining Southwest, Inc.

20

20.00

	nual Sampling	st, IIIC.							
Sample ID 5ML RB	SampType: M	BLK	Test	Code: EF	A Method	8015B: Gasol	ine Rang	9	· · · · ·
Client ID: PBW	Batch ID: Ri	3307	R	unNo: 83	307				
Prep Date:	Analysis Date: 1	/28/2013	S	eqNo: 23	39905	Units: mg/L			
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 0.050 18	20.00		89.5	51.9	148			
Sample ID 2.5UG GRO LCS	SampType: Lt	s	Tes	Code: Ef	A Method	8015B: Gasol	ine Rang	e	
Client D: LCSW	Batch ID: R	3307	F	tunNo: 8	307				
Prep Date:	Analysis Date: 1	/28/2013	S	ieqNo: 2	39906	Units: mg/L			
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sasoline Range Organics (GRO)	0.55 0.050	0.5000	0	111	73.2	124		-	
Surr: BFB	21	20.00		103	51.9	148			
Sample ID 5ML RB	SampType: M	BLK	Tes	Code: El	PA Method	8015B: Gaso	line Rang	e	
Client ID: PBW	Batch ID: R	8330	F	tunNo: 8	330				
Prep Date:	Analysis Date: 1	/29/2013	\$	eqNo: 2	40513	Units: mg/L			
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 0.050 19	20.00		93.4	51.9	148			
Sample ID 2.5UG GRO LCS	SampType: L	cs	Tes	tCode: El	PA Method	8015B: Gaso	line Rang	e	
Client ID: LCSW	Batch ID: R	B330	F	RunNo: 8	330				
Prep Date:	Analysis Date: 1	/29/2013	\$	SeqNo: 2	40514	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	108	73.2	124			

### Qualifiers:

Sum: BFB

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- 11 Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

51.9

98.9

148

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# Hall Environmental Analysis Laboratory, Inc.

1301846 14-Feb-13

Client:

Western Refining Southwest, Inc.

Project: GBR A	nnual Samp	ling								
Sample ID 5ml rb	SampT	ype: Mi	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: RE	284	F	RunNo: 8	284				
Prep Date:	Analysis D	ate: 1	25/2013	15 S	SeqNo: 2	39278	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	7.4		10,00		74.2	70	130			
Surr: 4-Bromofluorobenzene	8.9		10.00		88.7	69.5	130			
Surr: Dibromofluoromethane	8.3		10.00		82.7	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			
Sample ID 100ng Ics	SampT	ype: LC	s	Tes	tCode: E	PA Method	8260B: VOL	ATILES	1	
Client ID: LCSW	Batch	ID: R8	284	F	RunNo: 8	284				
Prep Date:	Analysis D	ate: 1	25/2013	S	eqNo: 2	39280	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	7.9		10.00		78.9	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		86.0	69.5	130			
Surr: Dibromofluoromethane	8.4		10.00		84.1	70	130			
Surr. Toluene-d8	9.9		10.00		98.9	70	130			
Sample ID 5ml rb	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: R8	332	R	RunNo: 8	332				
Prep Date:	Analysis D	ate: 1/	29/2013	S	eqNo: 2	40554	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Senzene	ND	1.0								
oluene	ND	1.0								
thylbenzene	ND	1.0								
lethyl tert-butyl ether (MTBE)	ND	1.0								
,2,4-Trimethylbenzene	ND	1.0								
,3,5-Trimethylbenzene	ND	1.0								
,2-Dichloroethane (EDC)	ND	1.0								
,2-Dibromoethane (EDB)	ND	1.0								
laphthalene										
•	ND	2.0								
-Methylnaphthalene	ND ND	2.0 4.0								
-Methylnaphthalene										
-Methylnaphthalene -Methylnaphthalene	ND	4.0								J
-Methylnaphthalene -Methylnaphthalene cetone	ND ND	4.0 4.0								J
Methylnaphthalene Methylnaphthalene cetone romobenzene	ND ND 2.6	4.0 4.0 10								J
-Methylnaphthalene -Methylnaphthalene cetone romobenzene romodichloromethane	ND ND 2.6 ND	4.0 4.0 10 1.0								J
-Methylnaphthalene -Methylnaphthalene cetone fromobenzene fromodichloromethane fromoform	ND ND 2.6 ND ND	4.0 4.0 10 1.0 1.0								J
-Methylnaphthalene -Methylnaphthalene cetone Iromobenzene Iromodichloromethane Iromoform Iromomethane	ND ND 2.6 ND ND	4.0 4.0 10 1.0 1.0								J
•	ND ND 2.6 ND ND ND	4.0 4.0 10 1.0 1.0 3.0								J
-Methylnaphthalene -Methylnaphthalene ccetone fromobenzene fromodichloromethane fromomethane fromomethane fromomethane -Butanone	ND ND 2.6 ND ND ND ND	4.0 4.0 10 1.0 1.0 1.0 3.0								J
-Methylnaphthalene -Methylnaphthalene ccetone tromobenzene tromodichloromethane tromomethane tromomethane tromomethane -Butanone carbon disulfide	ND ND 2.6 ND ND ND ND ND ND ND ND ND	4.0 4.0 10 1.0 1.0 1.0 3.0 10								J

## Chloroform Qualifiers:

Value exceeds Maximum Contaminant Level.

ND

1.0

- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- RPD outside accepted recovery limits

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

**Client:** 

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 5ml rb	SampT	ype: MBLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: R8332	F	RunNo: 8	332				
Prep Date:	Analysis D	ate: 1/29/2013		SeqNo: 2	40554	Units: µg/L			
Analyte	Result	PQL SPK value	e SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloromethane	ND	3.0							
?-Chlorotoluene	ND	1.0							
I-Chlorotoluene	ND	1.0							
:is-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.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846 *14-Feb-13* 

Client:

Western Refining Southwest, Inc.

Project:

GBR Annual Sampling

Project: GBR A	Annual Samp	ling						1001		
Sample ID 5ml rb	Samp1	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batcl	h ID: R8	332	F	RunNo: 8	332				
Prep Date:	Analysis E	Date: 1/	29/2013		SeqNo: 2	40554	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0	-	<del></del>						
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.2		10.00		81.9	70	130			
Surr: 4-Bromofluorobenzene	9,8		10.00		98.3	69.5	130			
Surr; Dibromofluoromethane	9.1		10.00		90.9	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			
Sample ID 100ng Ics	SampT	Type: LC	s	Tes	tCode: El	PA Method	8260B: VOL	ATILES		G.
Client ID: LCSW	Batcl	h ID: R8	332	F	RunNo: 8	332				
Prep Date:	Analysis C	Date: 1/	29/2013	5	SeqNo: 2	40556	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1,0	20.00	0	99.2	70	130			
Toluene	20	1,0	20.00	0	99.4	80	120			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	73.7	122			
Trichloroethene (TCE)	18	1.0	20.00	0	88.2	70	130			
Surr: 1,2-Dichloroethane-d4	8.4		10.00		84.1	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.0	69.5	130			
Surr: Dibromofluoromethane	8.9		10.00		89.4	70	130			
Surr: Toluene-d8	9.8		10.00		98.4	70	130			

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846

14-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID mb-1

SampType: MBLK

TestCode: SM2320B: Alkalinity

Client ID:

PBW

LCSW

Batch ID: R8309

RunNo: 8309

Prep Date:

Analysis Date: 1/28/2013

20

20

SeqNo: 239973

Units: mg/L CaCO3

Analyte

Result **PQL** ND

SPK value SPK Ref Val %REC LowLimit

SPK value SPK Ref Val

HighLimit %RPD **RPDLimit** 

Total Alkalinity (as CaCO3)

Sample ID Ics-1

SampType: LCS Batch ID: R8309 TestCode: SM2320B: Alkalinity RunNo: 8309

LowLimit

90

Client ID: Prep Date:

%REC

Units: mg/L CaCO3

Analysis Date: 1/28/2013

SeqNo: 239974

Qual

Analyte

80.00

99.7

%RPD **RPDLimit**  Qual

Total Alkalinity (as CaCO3)

80

Result

0

**HighLimit** 

110

Qualifiers:

Value exceeds Maximum Contaminant Level,

6 Value above quantitation range

Analyte detected below quantitation limits

Sample pH greater than 2

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301846 14-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID MB-5864

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW

Batch ID: 5864

RunNo: 8325

Prep Date: 1/28/2013

Sample ID LCS-5864

Analysis Date: 1/29/2013

SeqNo: 240401

SPK value SPK Ref Val %REC LowLimit

Units: mg/L HighLimit

%RPD

Qual

Analyte Total Dissolved Solids Result ND

SampType: LCS

PQL

20.0

SeqNo: 240402

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW

Batch ID: 5864

RunNo: 8325

Units: mg/L

Analyte

Prep Date: 1/28/2013 Analysis Date: 1/29/2013 PQL

SPK value SPK Ref Val 1000

%REC 101

LowLimit

**HighLimit** 

**RPDLimit** 

**RPDLimit** 

Qual

Total Dissolved Solids

1010 20.0

Result

120

%RPD

# Qualifiers:

- Value exceeds Maximum Contaminant Level,
- E Value above quantitation range
- J Analyte detected below quantitation limits
- þ Sample pH greater than 2

- В Analyte detected in the associated Method Blank
- $\mathbf{H}$ Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit

RPD outside accepted recovery limits R

Page 14 of 14



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105

TEL: 505-345-3975 FAX: 505-345-410: Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: Western Refining Southwest, Inc Bloomfield W	ork Order Number: 1301846
Received by/date: 01/35/13	
Logged By: Michelle Garcia 1/25/2013 10:00:00 AM	Mitalle Garrie
Completed By: Michelle Garcia 1/25/2013 10:51:32 AM	Mitall Games
Reviewed By: 61/25/13	
Chain of Custody	
1. Were seals intact?	Yes No Not Present 🗹
2. Is Chain of Custody complete?	Yes 🗹 No 🗌 Not Present 🗌
3. How was the sample delivered?	Courier
Log In	
4. Coolers are present? (see 19. for cooler specific information)	Yes 🗹 No 🗀 NA 🗀
5. Was an attempt made to cool the samples?	Yes V No NA NA
6. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹 No 🗆 NA 🗆
7. Sample(s) in proper container(s)?	Yes 🗹 No 🗌
8. Sufficient sample volume for indicated test(s)?	Yes 🗹 No 🔲
9. Are samples (except VOA and ONG) properly preserved?	Yes 🗹 No 🗌
10. Was preservative added to bottles?	Yes 🗆 No 🗹 NA 🗀
11. VOA vials have zero headspace?	Yes 🗹 No 🗆 No VOA Vials 🗆
12. Were any sample containers received broken?	Yes No 🗹
13. Does paperwork match bottle labels?	Yes No  # of preserved bottles checked
(Note discrepancies on chain of custody)	for pH:
14. Are matrices correctly identified on Chain of Custody?	Yes ✓ No ☐ (<2 or >12 unless noted) Yes ✓ No ☐ Adjusted?
15. Is it clear what analyses were requested?  16. Were all holding times able to be met?	Yes V No 🗆
(If no, notify customer for authorization.)	Checked by:
Special Handling (if applicable)	
17. Was client notified of all discrepancies with this order?	Yes 🗆 No 🗀 NA 🗹 .
Person Notified: Date:	and the second s
	eMail Phone Fax In Person
Regarding:	
Client Instructions:	
18. Additional remarks:	
40. Cooler Information	
19. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No S	Seal Date Signed By
1 1.0 Good Yes	

	HALL ENVIKONMENIAL ANALYSIS LABORATORY	www.hallenvironmental.com ns NE - Albuquerque, NM 87109	-3975 Fax 505-345-4107	Analysis Request	J'	s' <b>'</b> 'Od'	80708 2, 006 808 \ (A	o or alstales (A)	EDB (Methors (831) RCRA 8 Methors (F.CA 8 Methors (F.CA 8 Methors (F.CA 8 Methors (Semilar) Methors (S		X							Please Copy Results to aager @Henv.	
		www.hi	Tel. 505-345-3975	-	(Aju	o 889)	H9T +	. 38 (GF	BTEX + MT BTEX + MT B315B H91bd	_		X	X	e				Remarks: Please	
Turn-Around Time:	Standard 🗆 Rush	Project Name: (3.8% Annual Sampling			Project Manager:	Ashley Ager	win Hencmann	State of the second of the sec	Container Preservative Type and # Type	3 400 Hel -001	7 vinas Verious - (002	3 von Hec 1 - 003	13 40 1 Her 1 - 004					Received by: Date Time 1	Recarbadity: Date Time
Chain-of-Custody Record	Client: Kelly Robinson	801	3413	Phone #:	email or Fax#:	QA/QC Package:	n Other	□ EDD (Type)	Date Time Matrix Sample Request ID	12/15/143 GU 5HS-9	4/13 HZG GW SHS-8	124/13 1535 GV 15 HS-2	24/13/13/12/6W IS HS-6		The Contract of the Contract o			Типе: /З ГЛ/D	Date: Time: Relinquished by:  1.1.56 Trains Lie Western Received by:

TABLE 1

### 2012 SAMPLING SCHEDULE FORMER GIANT BLOOMFIELD REFINERY WESTERN REFINING

Sample ID	ANNUALLY (Jan)	Notes:
	VOC	VOC
System-Inducer	OVC	method 8260
	Voc	morrosezzo amen AT 01/25/1
	GWC	EVIL DOVALLE
System Effluent	METALS	motion 8270 amber 14 01 25/1
	PAH	
	VQC	GWC
GBN(3	GINS.	pH
	PAH	EC
1/	YOC	TDS
GRYNS	dvc	alkalinity
	PAN	hardness
1	VDC /	anions
GBR	GVG	bromide
	PAH	chloride
1	\ VOC	sulfate
GBR-24	GW2	fluoride
	PAH	nitrate/nitrite
1	Voc	phosporus = POU fer LR cations calcium
GBI 20	g)ke	cations
	PAH	calcium 10/25/13
2 /	VOC	iron
GBR 21	dyc .	magnesium
	PAR	manganesc
1/	VQC	potassium
GBB) 22	GW	sodium
	METALS	
~	VQC	Metals
GBP48	GDIC :	barium
	METALS	beryllium
	VOC	cadmium
GBR-M	OWE.	chromium
	ME/TALS	copper
	200	lcad
GBR-M	<b>6</b> (C	nickel
	METALS	silver
GBR SI	VQ2	zinc
dbly 34	2000	antimony
GBR 62	VQC	arsenic
JDR-02	GMG	selenium
SHS-8	VOC ,	thallium
3112-0	GWC	mercury





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

February 11, 2013

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413 TEL: (970) 946-1093

FAX

RE: GBR Annual Sampling

OrderNo.: 1301999

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/31/2013 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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. 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.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR** Annual Sampling

Lab ID: 1301999-001

Project:

Client Sample ID: Influent

Collection Date: 1/30/2013 1:25:00 PM

Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS					Analyst: JRR
Fluoride	0.65	0.10	mg/L	1	1/31/2013 4:18:53 PM
Chloride	85	10	mg/L	20	1/31/2013 4:31:17 PM
Nitrogen, Nitrite (As N)	ND	0.10	mg/L	1	1/31/2013 4:18:53 PM
Bromide	0,49	0.10	mg/L	1	2/5/2013 10:56:53 PM
Nitrogen, Nitrate (As N)	ND	0.10	mg/L	1	1/31/2013 4:18:53 PM
Phosphorus, Orthophosphate (As P)	ND	10	mg/L	20	1/31/2013 4:31:17 PM
Sulfate	1400	25	* mg/L	50	2/5/2013 11:09:18 PM
EPA METHOD 200.7: METALS					Analyst: JLF
Calcium	280	10	mg/L	10	2/4/2013 7:54:31 PM
Iron	0.14	0.020	mg/L	1	2/4/2013 7:50:20 PM
Magnesium	33	1.0	mg/L	1	2/4/2013 7:50:20 PM
Manganese	0.98	0.010	* mg/L	5	2/1/2013 6:45:22 PM
Potassium	3.4	1.0	mg/L	1	2/4/2013 7:50:20 PM
Sodium	560	10	mg/L	10	2/4/2013 7:54:31 PM
SM2340B: HARDNESS					Analyst: JLF
Hardness (As CaCO3)	840	6.6	mg/L	1	2/4/2013 1:44:00 PM
<b>EPA METHOD 8260B: VOLATILES</b>					Analyst: DJF
Benzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Toluene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Ethylbenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,3,5-Trimethylbenzene	ND	1:0	μg/L	1	2/1/2013 4:53:53 PM
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Naphthalene	ND	2.0	μg/L	1	2/1/2013 4:53:53 PM
1-Methylnaphthalene	ND	4.0	μg/L	1	2/1/2013 4:53:53 PM
2-Methylnaphthalene	ND	4.0	μg/L	1	2/1/2013 4:53:53 PM
Acetone	ND	10	μg/L	1	2/1/2013 4:53:53 PM
Bromobenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Bromodichloromethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Bromoform	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Bromomethane	ND	3.0	μg/L	1	2/1/2013 4:53:53 PM
2-Butanone	ND	10	μg/L	1	2/1/2013 4:53:53 PM
Carbon disulfide	ND	10	μg/L	1	2/1/2013 4:53:53 PM
Carbon Tetrachloride	ND	1.0	µg/L	1	2/1/2013 4:53:53 PM
Chlorobenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Chloroethane	ND	2.0	µg/L	1	2/1/2013 4:53:53 PM
Chloroform	ND	1.0	µg/L	1	2/1/2013 4:53:53 PM
Chloromethane	ND	3.0	μg/L	1	2/1/2013 4:53:53 PM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

  Page 1 of 28

### Analytical Report Lab Order 1301999

Date Reported: 2/11/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**Project:** GBR Annual Sampling

**Lab ID:** 1301999-001

Client Sample ID: Influent

Collection Date: 1/30/2013 1:25:00 PM

Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				Marthur	Analyst: DJF
2-Chlorotoluene	ND	1.0	μg/L	1 =	2/1/2013 4:53:53 PM
4-Chlorotoluene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
cis-1,2-DCE	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	2/1/2013 4:53:53 PM
Dibromochloromethane	ND	1.0	μg/L	1	2/1/2013 4 53 53 PM
Dibromomethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,4-Dichlorobenzene	ND	1.0	µg/L	1	2/1/2013 4:53:53 PM
Dichlorodifluoromethane	ND	1.0	µg/L	1	2/1/2013 4:53:53 PM
1,1-Dichloroethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,1-Dichloroethene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2-Dichloropropane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,3-Dichloropropane	ND	1.0	µg/L	800 W.H	2/1/2013 4:53:53 PM
2,2-Dichloropropane	ND	2.0	μg/L	1	2/1/2013 4:53:53 PM
1,1-Dichloropropene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Hexachlorobutadiene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
2-Hexanone	ND	10	μg/L	1	2/1/2013 4:53:53 PM
Isopropylbenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
4-Isopropyltoluene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
4-Methyl-2-pentanone	ND	10	μg/L	1	2/1/2013 4:53:53 PM
Methylene Chloride	ND	3.0	μg/L	1	2/1/2013 4:53:53 PM
n-Butylbenzene	ND	3.0	μg/L	1	2/1/2013 4:53:53 PM
n-Propylbenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
sec-Butylbenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Styrene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
tert-Butylbenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,1,1,2-Tetrachioroethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	2/1/2013 4:53:53 PM
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
trans-1,2-DCE	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,1,1-Trichloroethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Trichloroethene (TCE)	ND	1.0	µg/L	1	2/1/2013 4:53:53 PM
Trichlorofluoromethane	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
1,2,3-Trichloropropane	ND	2.0	μg/L	1	2/1/2013 4:53:53 PM
Vinyl chloride	ND	1.0	μg/L	1	2/1/2013 4:53:53 PM
Xylenes, Total	ND	1.5	μg/L	1	2/1/2013 4:53:53 PM

Matrix: AQUEOUS

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 2 of 28

### **Analytical Report**

Lab Order 1301999

Date Reported: 2/11/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR Annual Sampling** 

1301999-001 Lab ID:

Project:

Client Sample ID: Influent

Collection Date: 1/30/2013 1:25:00 PM

Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: DJF
Surr: 1,2-Dichloroethane-d4	74.9	70-130		%REC	1	2/1/2013 4:53:53 PM
Surr: 4-Bromoftuorobenzene	97.2	69.5-130		%REC	1	2/1/2013 4:53:53 PM
Surr: Dibromofluoromethane	86.4	70-130		%REC	1	2/1/2013 4:53:53 PM
Surr. Toluene-d8	96.4	70-130		%REC	1	2/1/2013 4:53:53 PM
<b>EPA 120.1: SPECIFIC CONDUCTANC</b>	E					Analyst: JML
Conductivity	3600	0.010		µmhos/cm	1	2/4/2013 1:08:31 PM
SM4500-H+B: PH						Analyst: JML
pН	7.43	1.68	Н	pH units	1	2/4/2013 1:08:31 PM
SM2320B: ALKALINITY						Analyst: JML
Bicarbonate (As CaCO3)	510	20		mg/L CaCO3	1	2/4/2013 1:08:31 PM
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	.1	2/4/2013 1:08:31 PM
Total Alkalinity (as CaCO3)	510	20		mg/L CaCO3	1	2/4/2013 1:08:31 PM
SM2540C MOD: TOTAL DISSOLVED	SOLIDS					Analyst: JML
Total Dissolved Solids	2670	20.0		mg/L	1	2/4/2013 9:31:00 AM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 3 of 28

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 2/11/2013

CLIENT: Western Refining Southwest, Inc.

Project: **GBR Annual Sampling** 

Lab ID: 1301999-002 Client Sample ID: Effluent

Collection Date: 1/30/2013 1:07:00 PM

Matrix: AQUEOUS Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS					Analyst: JRR
Fluoride	0.63	0.10	mg/L	1	1/31/2013 4:43:41 PM
Chloride	<b>83</b>	10	mg/L	20	1/31/2013 4:56:06 PM
Nitrogen, Nitrite (As N)	ND	0.10	mg/L	1	1/31/2013 4:43:41 PM
Bromide	0.33	0.10	mg/L	1	2/5/2013 11:46:32 PM
Nitrogen, Nitrate (As N)	0.21	0.10	mg/L	1	1/31/2013 4:43:41 PM
Phosphorus, Orthophosphate (As P)	ND	10	mg/L	20	1/31/2013 4:56:06 PM
Sulfate	1400	25	* mg/L	50	2/5/2013 11:58:57 PM
EPA METHOD 200.7: METALS					Analyst: JLF
Barium	0.019	0.010	mg/L	5	2/1/2013 7:15:29 PM
Beryllium	ND	0.010	mg/L	5	2/1/2013 7:15:29 PM
Cadmium	ND	0.010	mg/L	5	2/1/2013 7:15:29 PM
Calcium	300	10	mg/L	10	2/6/2013 5:49:28 PM
Chromium	ND	0.030	mg/L	5	2/1/2013 7:15:29 PM
Iron	0.021	0.020	mg/L	1	2/4/2013 7:58:38 PM
Magnesium	32	1.0	mg/L	1	2/4/2013 7:58:38 PM
Manganese	0,78	0.010	* mg/L	5	2/1/2013 7:15:29 PM
Nickel	ND	0.050	mg/L	5	2/1/2013 7:15:29 PM
Potassium	3.4	1.0	mg/L	1	2/4/2013 7:58:38 PM
Silver	ND	0.025	mg/L	5	2/1/2013 7:15:29 PM
Sodium	560	10	mg/L	10	2/6/2013 5:49:28 PM
Zinc	0.030	0.010	mg/L	1	2/6/2013 5:37:03 PM
EPA 200.8: METALS					Analyst: DBD
Antimony	ND	0.0010	mg/L	1	2/1/2013 4:01:22 PM
Arsenic	ND	0.0010	mg/L	1	2/1/2013 4:01:22 PM
Lead	ND	0.0010	mg/L	1	2/1/2013 4:01:22 PM
Copper	0.0036	0.0010	mg/L	1	2/1/2013 4:01:22 PM
Selenium	0.0013	0.0010	mg/L	1	2/1/2013 4:01:22 PM
Thallium	ND	0.0010	mg/L	1	2/1/2013 4:01:22 PM
EPA METHOD 245.1: MERCURY					Analyst: TMG
Mercury	ND	0.00020	mg/L	1	2/6/2013 12:55:24 PM
SM2340B: HARDNESS					Analyst: ELS
Hardness (As CaCO3)	870	6.6	mg/L	1	2/6/2013 7:33:00 AM
EPA METHOD 8270C: PAHS					Analyst: JDC
Naphthalene	ND	0.50	µg/L	1	2/6/2013 1:58:18 PM
1-Methylnaphthalene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
2-Methylnaphthalene	ND	0.50	µg/L	1	2/6/2013 1:58:18 PM
Acenaphthylene	ND	0.50	µg/L	1	2/6/2013 1:58:18 PM
Acenaphthene	ND	0.50	µg/L	1	2/6/2013 1:58:18 PM
Fluorene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM

- Value exceeds Maximum Containinant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits

### **Analytical Report**

Lab Order 1301999

Date Reported: 2/11/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

GBR Annual Sampling

**Lab ID:** 1301999-002

Project:

**Client Sample ID: Effluent** 

Collection Date: 1/30/2013 1:07:00 PM

Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8270C: PAHS		·····			Analyst: JDC
Phenanthrene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Anthracene	ND	0.75	μg/L	1	2/6/2013 1:58:18 PM
Fluoranthene	ND	0.75	μg/L	1	2/6/2013 1:58:18 PM
Pyrene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Benz(a)anthracene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Chrysene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Benzo(b)fluoranthene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Benzo(k)fluoranthene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Benzo(a)pyrene	ND	0.50	μg/L	1	2/6/2013 1:58:18 PM
Dibenz(a,h)anthracene	ND	0.75	µg/L	1	2/6/2013 1:58:18 PM
Benzo(g,h,i)perylene	ND	0.75	µg/L	1	2/6/2013 1:58:18 PM
Indeno(1,2,3-cd)pyrene	ND	1.0	μg/L	1	2/6/2013 1:58:18 PM
Surr: Benzo(e)pyrene	87.2	38-145	%REC	1	2/6/2013 1:58:18 PM
Surr: N-hexadecane	96.4	40-107	%REC	1	2/6/2013 1:58:18 PM
EPA METHOD 8260B: VOLATILES					Analyst: DJF
Benzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Toluene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Ethylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	2/1/2013 5:26:15 PM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Naphthalene	ND	2.0	μg/L	1	2/1/2013 5:26:15 PM
1-Methylnaphthalene	ND	4.0	μg/L	1	2/1/2013 5:26:15 PM
2-Methylnaphthalene	ND	4.0	μg/L	1	2/1/2013 5:26:15 PM
Acetone	10	10	μg/L	1	2/1/2013 5:26:15 PM
Bromobenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Bromodichloromethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Bromoform	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Bromomethane	ND	3.0	μg/L	1	2/1/2013 5:26:15 PM
2-Butanone	ND	10	μg/L	1	2/1/2013 5:26:15 PM
Carbon disulfide	ND	10	μg/L	1	2/1/2013 5:26:15 PM
Carbon Tetrachloride	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Chlorobenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Chloroethane	ND	2.0	μg/L	1	2/1/2013 5:26:15 PM
Chloroform	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Chloromethane	ND	3.0	μg/L	1	2/1/2013 5:26:15 PM
2-Chlorotoluene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
4-Chlorotoluene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
cis-1,2-DCE	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 5 of 28

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Effluent

**Project:** GBR Annual Sampling

Collection Date: 1/30/2013 1:07:00 PM

Lab ID: 1301999-002

Matrix: AQUEOUS

Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL Qua	d Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: DJF
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	2/1/2013 5:26:15 PM
Dibromochloromethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Dibromomethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,3-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,4-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 5 26 15 PM
Dichlorodifluoromethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,1-Dichloroethane	ND	1.0	µg/L	1	2/1/2013 5:26:15 PM
1,1-Dichloroethene	ND	1.0	μ <b>g/L</b>	1	2/1/2013 5:26:15 PM
1,2-Dichloropropane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,3-Dichloropropane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
2,2-Dichloropropane	ND	2.0	μg/L	1	2/1/2013 5:26:15 PM
1,1-Dichloropropene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Hexachlorobutadiene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
2-Hexanone	ND	10	μg/L	1	2/1/2013 5:26:15 PM
Isopropylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
4-Isopropyltoluene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
4-Methyl-2-pentanone	ND	10	μg/L	1	2/1/2013 5:26:15 PM
Methylene Chloride	ND	3.0	μg/L	1	2/1/2013 5:26:15 PM
n-Butylbenzene	ND	3.0	μg/L	1	2/1/2013 5:26:15 PM
n-Propylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
sec-Butylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Styrene	ND	1.0	µg/L	1	2/1/2013 5:26:15 PM
tert-Butylbenzene	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	2/1/2013 5:26:15 PM
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
trans-1,2-DCE	ND	1.0	µg/L	1	2/1/2013 5:26:15 PM
trans-1,3-Dichloropropene	NĐ	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2,3-Trichlorobenzene	MD	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2,4-Trichlorobenzene	ВN	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,1,1-Trichloroethane	NĐ	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,1,2-Trichloroethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Trichloroethene (TCE)	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Trichlorofluoromethane	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
1,2,3-Trichloropropane	ND	2.0	μ <b>g/L</b>	1	2/1/2013 5:26:15 PM
Vinyl chloride	ND	1.0	μg/L	1	2/1/2013 5:26:15 PM
Xylenes, Total	ND	1.5	μg/L	1	2/1/2013 5:26:15 PM
Surr: 1,2-Dichloroethane-d4	82.4	70-130	%REC	1	2/1/2013 5:26:15 PM
Surr: 4-Bromofluorobenzene	92.8	69.5-130	%REC	1	2/1/2013 5:26:15 PM
Surr: Dibromofluoromethane	90.4	70-130	%REC	1	2/1/2013 5:26:15 PM

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

### Analytical Report Lab Order 1301999

Date Reported: 2/11/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Effluent

Project:

Collection Date: 1/30/2013 1:07:00 PM **GBR Annual Sampling** 

1301999-002 Lab ID: Matrix: AQUEOUS Received Date: 1/31/2013 10:10:00 AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES			<del></del>		Analyst: DJF
Surr: Toluene-d8	94.9	70-130	%REC	1	2/1/2013 5:26:15 PM
EPA 120.1: SPECIFIC CONDUCTANCE					Analyst: JML
Conductivity	3500	0.010	µmhos/cm	1	2/4/2013 1:33:35 PM
SM4500-H+B: PH					Analyst: JML
pH	7.45	1.68 H	pH units	1	2/4/2013 1:33:35 PM
SM2320B: ALKALINITY					Analyst: JML
Bicarbonate (As CaCO3)	510	20	mg/L CaCO3	1	2/4/2013 1:33:35 PM
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3	1	2/4/2013 1:33:35 PM
Total Alkalinity (as CaCO3)	510	20	mg/L CaCO3	1	2/4/2013 1:33:35 PM
SM2540C MOD: TOTAL DISSOLVED SO	LIDS				Analyst: JML
Total Dissolved Solids	2660	20.0	mg/L	1	2/4/2013 9:31:00 AM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- 11 Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 7 of 28

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: FIELD BLANK

Project: GBR Annual Sampling

Collection Date: 1/31/2013 10:10:00 AM

Lab ID: 1301999-003

Matrix: AQUEOUS Received Date: 1/31/2013 10:10:00 AM

Analyses	Result 🥼	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES				II To	Analyst: DJF
Benzene	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
Toluene	ND	1.0	µg/L	1	2/1/2013 5:58:28 PM
Ethylbenzene	-ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
1.2-Dichloroethane (EDC)	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
Naphthalene	ND	2.0	μg/L	1	2/1/2013 5:58:28 PM
1-Methylnaphthalene	ND	4.0	μg/L	1	2/1/2013 5:58:28 PM
2-Methylnaphthalene	ND	4.0	μg/L	1	2/1/2013 5:58:28 PM
Acetone	ND	10	µg/L	1	2/1/2013 5:58:28 PM
Bromobenzene	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
Bromodichloromethane	ND	1,0	μg/L	1	2/1/2013 5:58:28 PM
Bromoform	ND	1.0	μg/L	1	2/1/2013 5:58 28 PM
Bromomethane	ND	3.0	μg/L	1	2/1/2013 5:58 28 PM
2-Butanone	ND	10	μg/L	1	2/1/2013 5:58 28 PM
Carbon disulfide	ND	10	μg/L	1	2/1/2013 5:58:28 PM
Carbon Tetrachloride	ND	1.0	μg/L	1	2/1/2013 5:58 28 PM
Chlorobenzene	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
Chloroethane	ND	2.0	μg/L	1	2/1/2013 5:58 28 PM
Chloroform	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
Chloromethane	ND	3.0	μg/L	1	2/1/2013 5:58 28 PM
2-Chlorotoluene	NĐ	1.0	μg/L	1	2/1/2013 5 58 28 PM
4-Chlorotoluene	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
cis-1,2-DCE	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	2/1/2013 5 58 28 PM
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	2/1/2013 5 58 28 PM
Dibromochloromethane	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
Dibromomethane	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
1,2-Dichlorobenzene	ND	1.0	µg/L	1	2/1/2013 5 58 28 PM
1.3-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
1.4-Dichlorobenzene	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
Dichlorodifluoromethane	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
1,1-Dichloroethane	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
1,1-Dichloroethene	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
1,2-Dichloropropane	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
1,3-Dichloropropane	ND	1.0	μg/L	1	2/1/2013 5 58 28 PM
2,2-Dichloropropane	ND	2.0	µg/L	1	2/1/2013 5:58:28 PM
1,1-Dichloropropene	ND	1.0	µg/L	1	2/1/2013 5:58:28 PM
Hexachlorobutadiene	ND	1.0	μg/L	1	2/1/2013 5:58:28 PM
2-Hexanone	ND	10	μg/L	1	2/1/2013 5:58:28 PM

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits Page 8 of 28

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: FIELD BLANK

**GBR Annual Sampling** Project: 1301999-003

Lab ID:

Received Date: 1/31/2013 10:10:00 AM Matrix: AQUEOUS

Collection Date: 1/31/2013 10:10:00 AM

DF Result **RL Qual Units Date Analyzed** Analyses Analyst: DJF **EPA METHOD 8260B: VOLATILES** 2/1/2013 5:58:28 PM Isopropylbenzene ND 1.0 μg/L 1 ND 1.0 1 2/1/2013 5:58:28 PM 4-Isopropyltoluene μg/L 4-Methyl-2-pentanone ND 10 µg/L 1 2/1/2013 5:58:28 PM Methylene Chloride ND 3.0 μg/L 1 2/1/2013 5:58:28 PM ND 3.0 1 2/1/2013 5:58:28 PM n-Butylbenzene μg/L 1.0 2/1/2013 5:58:28 PM ND µg/L 1 n-Propylbenzene 2/1/2013 5:58:28 PM ND 1.0 μg/L 1 sec-Butylbenzene 2/1/2013 5:58:28 PM ND 1:0 Styrene μg/L 1 2/1/2013 5:58:28 PM tert-Butylbenzene ND 1.0 µg/L 1,1,1,2-Tetrachloroethane ND 1.0 μg/L 2/1/2013 5:58:28 PM 1,1,2,2-Tetrachloroethane ND 2.0 μg/L 2/1/2013 5:58:28 PM Tetrachloroethene (PCE) ND 1.0 μg/L 2/1/2013 5:58:28 PM ND 1.0 μg/L 2/1/2013 5:58:28 PM trans-1,2-DCE ND 1.0 2/1/2013 5:58:28 PM µg/L trans-1,3-Dichloropropene 2/1/2013 5:58:28 PM 1,2,3-Trichlorobenzene ND 1.0 1 µg/L 2/1/2013 5:58:28 PM 1 ND 1.0 1,2,4-Trichlorobenzene μg/L 2/1/2013 5:58:28 PM 1 1,1,1-Trichloroethane ND 1.0 μg/L 2/1/2013 5:58:28 PM 1,1,2-Trichloroethane ND 1.0 μg/L ND 1.0 μg/L 2/1/2013 5:58:28 PM Trichloroethene (TCE) ND 2/1/2013 5:58:28 PM Trichlorofluoromethane 1.0 μg/L 1,2,3-Trichloropropane ND 2.0 μg/L 2/1/2013 5:58:28 PM ND 1.0 μg/L 2/1/2013 5:58:28 PM Vinyl chloride ND 2/1/2013 5:58:28 PM Xylenes, Total 1.5 μg/L 2/1/2013 5:58:28 PM Surr: 1,2-Dichloroethane-d4 81.5 70-130 %REC 69.5-130 %REC 2/1/2013 5:58:28 PM Surr: 4-Bromofluorobenzene 102 2/1/2013 5:58:28 PM Surr: Dibromofluoromethane 89.2 70-130 %REC

70-130

%REC

96.2

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Surr: Toluene-d8

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery finite 9 of 28

2/1/2013 5:58:28 PM

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999 11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID MB	Samp	SampType: MBLK		Tes	tCode: EF					
Client ID: PBW	Bato	Batch ID: R8417		II F	RunNo: 84	417				
Prep Date:	Analysis	Date: 2/	1/2013		SeqNo: 24	42416	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020						×		
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID LCS	Samp	Type: LC	S	Tes	tCode: E	PA Method	200.7: Metals				
Client ID: LCSW	Bato	h ID: R8	417	F	RunNo: 8	417					
Prep Date:	Analysis I	Date: 2/	1/2013	\$	SeqNo: 2	42417	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	0.48	0.0020	0.5000	0	95,7	85	115				_
Beryllium	0.49	0.0020	0.5000	0	98.6	85	115				
Cadmium	0.49	0.0020	0.5000	0	97.3	85	115				
Chromium	0.47	0.0060	0.5000	0	95.0	85	115				
Manganese	0.47	0.0020	0.5000	0	93.7	85	115				
Nickel	0.45	0.010	0.5000	0	90.6	85	115				
Silver	0,098	0.0050	0.1000	0	98.1	85	115				

Sample ID 1301999-002EMS	Samp1	Type: MS	3	Tes	tCode: El	PA Method	200.7: Metal:	5		
Client ID: Effluent	Batc	h ID: <b>R8</b>	417	F	RunNo: 8	417				
Prep Date:	Analysis [	)ate: 2/	1/2013	9	SeqNo: 2	42446	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.3	0.010	2.500	0.01940	92.6	70	130			
Beryllium	2.3	0.010	2.500	0	92.7	70	130			
Cadmium	2.4	0.010	2.500	0	95.1	70	130			
Chromium	2.3	0.030	2.500	0	91.1	70	130			
Manganese	3.1	0.010	2.500	0.7818	91.6	70	130			
Nickel	2.1	0.050	2.500	0.01090	85.6	70	130			
Silver	0.46	0.025	0.5000	0	91.8	70	130			

Sample ID 1301999-002EMS	D Sampi	Type: MS	SD	Tes	lCode: El	PA Method	200.7: N	letals			
Client ID: Effluent	Batc	h ID: R8	417	F	lunNo: 8	417					
Prep Date:	Analysis [	)ate: 2/	1/2013	S	ieqNo: 2	42447	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLi	mit	%RPD	RPDLimit	Qual
Barium	2.3	0.010	2.500	0.01940	90.8	70	1	130	1.92	20	
Beryllium	2.3	0.010	2.500	0	90.2	70	_ 1	130	2.74	20	
Cadmium	2.3	0.010	2.500	0	92.8	70	1	130	2.40	20	

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 10 of 28

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Chent: Project:	GBR Ann	_		st, Inc.							
Sample ID	1301999-002EMSD	SampT	ype: MS	iD	Test	Code: El	PA Method	200.7: Metals			
Client ID:	Effluent	Batch	ID: R8	417	R	lunNo: 8	<b>417</b>				
Prep Date:		Analysis D	ate: 2/	1/2013	s	eqNo: 2	42447	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium		2.2	0.030	2,500	0	89.4	70	130	1.93	20	
Manganese		3.0	0.010	2.500	0.7818	89.4	70	130	1.75	20	
Nickel		2.1	0.050	2.500	0.01090	83.8	70	130	2.02	20	
Silver		0.45	0.025	0.5000	0	90.0	70	130	1.94	20	
Sample ID	MB	SampT	ype: ME	BLK	Test	tCode: El	PA Method	200.7: Metals	ı		
Client ID:	PBW	Batch	ID: R8	434	R	tunNo: 8	434				
Prep Date:		Analysis D	ate: 2/	4/2013	S	eqNo: 2	42905	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		ND	1.0								
ron		ND	0.020								
Magnesium		ND	1.0								
Potassium		ND	1.0								
Sodium		ND	1.0								
Sample 1D	LCS	SampType: LCS				tCode: E	PA Method	200.7: Metals	;		
Client ID:	LCSW	Batch ID: R8434			F	RunNo: 8	434				
Prep Date:		Analysis D	)ate: 2/	4/2013	8	SeqNo: 2	42906	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		50	1.0	50.00	0	100	85	115			
Iron		0.47	0.020	0.5000	0	94.7	85	115			
Magnesium		51	1.0	50.00	0	102	85	115			
Potass um		49	1.0	50.00	0	97.7	85	115			
Sodium		50	1.0	50.00	0	101	85	115			
Sample ID	1301999-002EMS	SampT	ype: M\$	5	Tes	tCode: E	PA Method	200.7: Metals	;		
Client ID:	Effluent	Batcl	h ID: R8	1434	F	RunNo: 8	434				
Prep Date:		Analysis D	Date: 2/	/4/2013	5	SeqNo: 2	42952	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	<del></del>	0.48	0.020	0.5000	0.02107	91.5	70	130			
Magnesium		83	1.0	50.00	31.71	102	70	130			
Potassium		56	1.0	50.00	3.354	105	70	130			
Sample ID	1301999-002EMSC	) Samp1	Гуре: М	SD	Tes	tCode: E	PA Method	200.7: Metals			
Client ID:	Effluent	Batcl	h ID: R	3434	F	RunNo: 8	434				
Prep Date:		Analysis D	Date: 2	/4/2013		SeqNo: 2	42953	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron		0.47	0.020	0.5000	0.02107	90.1	70	130	1.40	20	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

B Analyte detected in the associated Method Blank

RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Page 11 of 28

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID	1301999-002EMSD	SampT	ype: MS	SD	Tes	tCode: El	A Method	200.7: Metals		20.10	14.0
Client ID:	Effluent	Batch	ID: R8	434	F	RunNo: 8	434				
Prep Date:		Analysis D	ate: 2/	4/2013		SeqNo: 2	42953	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium		85	1.0	50.00	31.71	108	70	130	3.14	20	
Potassium		58	1.0	50.00	3.354	110	70	130	4.54	20	

Sample ID MB	SampType: MBLK	TestCode: EPA Method	200.7: Metals	
Client ID: PBW	Batch ID: R8478	RunNo: 8478		
Prep Date:	Analysis Date: 2/6/2013	SeqNo: 244275	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Calcium	ND 1.0			
Sodium	ND 1.0			
Zinc	ND 0.010			

Sample ID LCS	SampT	SampType: LCS			tCode: El	PA Method				
Client ID: LCSW	Batcl	Batch ID: R8478			lunNo: 8	478				
Prep Date:	Analysis D	)ate: 2/	6/2013	S	eqNo: 2	44276	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	57	1.0	50.00	0.06023	113	85	115			
Sodium	57	1.0	50.00	0	114	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID	1301999-002EMS	SampT	ype: MS	6 -	Tes	Code: El	PA Method	200.7: Metals	;		
Client ID:	Effluent	Batch	ID: R8	478	R	lunNo: 8	478				
Prep Date:		Analysis D	ate: 2/	6/2013	<b>S</b>	ieqNo: 2	44576	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
7inc		0.53	0.010	0.5000	0.02961	99.6	70	130			

Sample ID 1	301999-002EMSD	SampTy	oe: MS	SD	Tes	lCode: E	PA Method	200.7: Metals	3		
Client ID: E	Effluent	Batch I	D: R8	478	R	RunNo: 8	478				
Prep Date:		Analysis Da	le: 2/	6/2013	S	ieqNo: 2	44577	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc		0.55	0,010	0.5000	0.02961	103	70	130	3.29	20	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Qual

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 1301	PMACOOLF NO	

SampType: MS

TestCode: EPA 200.8: Metals

**BatchQC** 

Batch ID: R8404

PQL

0.0010

RunNo: 8404

Client ID:

Prep Date:

Analysis Date: 2/1/2013

SeqNo: 242110

Units: mg/L

130

%REC

**HighLimit** 

Analyte Arsenic

Result 0.030 SPK value SPK Ref Val 0.003515 0.02500

105 70 TestCode: EPA 200.8: Metals

LowLimit

%RPD **RPDLimit** 

Sample ID 1301987-001CMS

Client ID: BatchQC

SampType: MS Batch ID: R8404

RunNo: 8404

Prep Date:

Analysis Date: 2/1/2013

SPK value SPK Ref Val

0.02500

0.02500

0.02500

0.02500

0.02500

0.02500

SeqNo: 242112

Units: mg/L

Analyte Lead

Result PQL 0.026 0.0010

Result

0.024

0.024

0.024

0.025

0.024

0.025

ND

SPK value SPK Ref Val 0.02500 0.001471

%REC LowLimit 97.7

**HighLimit** 70 130 **RPDLimit** Qual

**RPDLimit** 

Sample ID LCS

SampType: LCS

TestCode: EPA 200.8: Metals

RunNo: 8404

LowLimit

85

85

85

85

85

85

115

115

115

115

115

115

%RPD

%RPD

%RPD

Client ID: LCSW Prep Date:

Batch ID: R8404 Analysis Date: 2/1/2013

PQL

0.0010

0.0010

0.0010

0.0010

0.0010

0

0

0

0

0

SeqNo: 242138

%REC

97.4

96.6

97.6

99.5

96.8

98.9

Units: mg/L **HighLimit** 

Analyte **Antimony** Arsenic Lead Copper

> Selenium Thallium

0.0010 SampType: MBLK

TestCode: EPA 200.8: Metals

%REC LowLimit

Sample ID MB Client ID:

Prep Date: 1/24/2013

**PBW** 

Batch ID: R8404 Analysis Date: 2/1/2013 RunNo: 8404

SeqNo: 242141

Units: mg/L

HighLimit

**RPDLimit** Qual

Qual

Analyte Antimony Arsenic Lead

**Thallum** 

Result PQL SPK value SPK Ref Val ND 0.0010 0.0010 ND 0.0010

0.0010

ND 0.0010 ND Copper ND 0.0010 Selenium

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range E

Analyte detected below quantitation limits

Sample pH greater than 2

Analyte detected in the associated Method Blank

RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R

Page 13 of 28

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID MB-6006

SampType: MBLK

TestCode: EPA Method 245.1: Mercury

LowLimit

Client ID: PRW

Batch ID: 6006

RunNo: 8477

Prep Date: 2/6/2013 Analysis Date: 2/6/2013

SeqNo: 244246

Units: mg/L

**RPDLimit** 

Analyte

PQL

HighLimit %RPD Qual

Mercury

ND 0.00020

SampType: LCS

TestCode: EPA Method 245.1: Mercury

Sample ID LCS-6006 Client ID: LCSW

Batch ID: 6006

RunNo: 8477

Units: mg/L

Analyte

Prep Date: 2/6/2013 Analysis Date: 2/6/2013

0.0052 0.00020

SeqNo: 244247

LowLimit

HighLimit

**RPDLimit** 

Qual

Mercury

PQL

SPK value SPK Ref Val 0.005000

SPK value SPK Ref Val %REC

%REC 104

120

%RPD

Sample ID 1302104-001BMS

SampType: MS

TestCode: EPA Method 245.1: Mercury

%RPD

%RPD

9.96

Client ID:

Prep Date:

**BatchQC** 

Batch ID: 6006

RunNo: 8477

84.0

%REC

92.8

Analyte

Analysis Date: 2/6/2013 PQL SPK value SPK Ref Val %REC

0.005000

0.005000

SPK value SPK Ref Val

SeqNo: 244249

Units: mg/L HighLimit

**RPDLimit** 

Qual

Qual

Mercury

Sample ID 1302104-001BMSD

SampType: MSD

0.0042 0.00020

0.0046 0.00020

TestCode: EPA Method 245.1: Mercury

75

75

125

Client ID: Prep Date: Analyte

Mercury

BatchQC 2/6/2013

2/6/2013

Batch ID: 6006 Analysis Date: 2/6/2013

PQL

RunNo: 8477

0

SeqNo: 244251

LowLimit

Units: mg/L HighLimit

125

**RPDLimit** 

### Oualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit
- Page 14 of 28

Sample pH greater than 2

RPD outside accepted recovery limits

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID MB	SampType: MBLK			Tes	tCode: E	5							
Client ID: PBW	Batcl	1D: R8	389	RunNo: 8389									
Prep Date:	Analysis C	Analysis Date: 1/31/2013			SeqNo: 241807			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											
Nitrogen, Nitrate (As N)	ND	0.10											
Phosphorus, Orthophosphate (As P	ND	0.50											
Sample ID LCS-b	Sampl	ype: LC	s	Tes	tCode: E	PA Method	300.0; Anion:	ş					
Client ID: 1 CSW Rotch ID: P8389				ZunNo 9	1380								

Sample ID LCS-b	Sampi	ype: LC	S	les	Code: El	A Method	300.0; Anions	3		
Client ID: LCSW	Batch	ID: R8	389	F	RunNo: 8	389				
Prep Date:	Analysis D	ate: 1/	31/2013	5	SeqNo: 2	41809	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.3	90	110			
Chloride	4.7	0.50	5.000	0	93.5	90	110			
Nitrogen, Nitrite (As N)	0.90	0.10	1.000	0	90.4	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.5	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.4	90	110			

Sample ID 1301987-001BMS	SampT	ype: MS	3	TestCode: EPA Method 300.0: Anions								
Client ID: BatchQC	Batch	ID: R8	389	F	RunNo: 8							
Prep Date:	SeqNo: 241820 Units: mg/L											
Analyle	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Fluoride	3.9	0.10	0.5000	3.482	74.4	76.6	110			S		
Chloride	18	0.50	5.000	13.41	98.0	87.8	111					
Nitrogen, Nitrite (As N)	0.85	0.10	1.000	0	84.7	72.5	111					
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04500	96.6	90.4	113					
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.1	74.5	115					

Sample ID 1301987-001BMS	D SampT	ype: MS	SD	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID: BatchQC	Batch	ID: R8	389	F	RunNo: 8	389				
Prep Date:	Analysis D	ate: 1/	31/2013	9	SeqNo: 2	41821	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.9	0.10	0.5000	3.482	75.8	76.6	110	0.181	20	S
Chloride	18	0.50	5.000	13.41	96.3	87.8	111	0.443	20	
Nitrogen, Nitrite (As N)	0.84	0.10	1.000	0	83.7	72.5	111	1.21	20	
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0.04500	94.7	90.4	113	1.99	20	
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	101	74.5	115	11.2	20	

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID 1301991-001AMS	SampT	ype: MS	6	Tes						
Client ID: BatchQC	Batcl	n ID: R8	389	F	RunNo: 8389					
Prep Date:	Analysis Date: 1/31/2013			SeqNo: 241824			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.0	0.10	0.5000	0.5696	93.2	76.6	110			
Chloride	9.4	0.50	5.000	4.580	96.9	87.8	111			
Nitrogen, Nitrite (As N)	0.89	0.10	1.000	0	89.4	72.5	111			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0.2649	98.5	90.4	113			
Phosphorus, Orthophosphate (As P	4.4	0.50	5.000	0.3252	81.8	74.5	115			

Sample ID 1301991-001AMS	D Samp1	ype: MS	SD	Tes	tCode: E	e_ 14				
Client ID: BatchQC	Batcl	ID: R8	389	F	RunNo: 8	389				
Prep Date:	Analysis D	ate: 1/	31/2013		SeqNo: 2	41825	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.0	0.10	0.5000	0.5696	93.6	76.6	110	0.183	20	
Chloride	9.4	0.50	5,000	4.580	95.4	87.8	111	0.800	20	
Nitrogen, Nitrite (As N)	0.88	0.10	1.000	0	88.3	72.5	= 111	1.18	20	
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0.2649	97.0	90.4	113	1.41	20	
Phosphorus, Orthophosphate (As P	4.4	0.50	5.000	0.3252	80.9	74.5	115	0.981	20	

Sample ID MB	SampT	уре: МЕ	BLK	TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch	ID: R8	389	F	RunNo: 8	389					
Prep Date:	Analysis D	)ate: 1/	31/2013		SeqNo: 2	41861	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									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P	ND	0.50									

Sample ID LCS	SampT	ype: LC	S	Tes	tCode: El	PA Method	300.0: Anion:	3		
Client ID: LCSW	Batcl	n ID: R8	389	F	RunNo: 8	389				
Prep Date:	Analysis C	ate: 1/	31/2013		SeqNo: 2	41862	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			<u>-</u>
Chloride	4.6	0.50	5.000	0	91.9	90	110			
Nitrogen, Nitrite (As N)	0.91	0.10	1.000	0	90.7	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	95.9	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	100	90	110			

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

SampType: MS

TestCode: EPA Method 300.0: Anions

Batch ID: R8389

RunNo: 8389

**BatchQC** Client ID:

Analysis Date: 1/31/2013 Prep Date:

SeqNo: 241867

Units: mg/L

Result Analyte

PQL

%REC LowLimit **HighLimit** 110

%RPD **RPDLimit** 

Qual

SPK value SPK Ref Val 0.4760 0.5000 76.6 Fluoride 0.940.10 93.1

Sample ID 1301A07-001AMSD

**BatchQC** 

SampType: MSD Batch ID: R8389

RunNo: 8389

TestCode: EPA Method 300.0: Anions

Client ID: Prep Date:

Analysis Date: 1/31/2013

SeqNo: 241868

Units: mg/L

%RPD **RPDLimit** 

Analyte Fluoride

Result POL SPK value SPK Ref Val

%REC LowLimit 94.6

76.6

HighLimit 110 0.762

Sample ID 1301A01-001AMS

SampType: MS

0.95

Result

TestCode: EPA Method 300.0: Anions

0.4760

0.5401

LowLimit

76.6

76.6

**HighLimit** 

110

Qual

Client ID: Prep Date:

**BatchQC** 

Batch ID: R8389

0.10

RunNo: 8389

Units: mg/L

Analyte

0.98

Analysis Date: 2/1/2013 PQL

0.10

SeqNo: 241870 %REC

%RPD

**RPDLimit** 

Qual

Qual

Fluoride

Sample ID 1301A01-001AMSD

SampType: MSD Batch ID: R8389

Analysis Date: 2/1/2013

TestCode: EPA Method 300.0: Anions

RunNo: 8389

88.2

Analyte Fluoride

Prep Date:

Client ID: BatchQC

Result PQL 0.99 0.10 SPK value 0.5000

0.5000

SPK value SPK Ref Val

0.5000

SPK Ref Val %REC

0.5401

SeqNo: 241871 LowLimit Units: mg/L **HighLimit** 

%RPD

**RPDLimit** 

20

Sample ID MB Client ID: PBW

Sample ID LCS

Prep Date:

Client ID: LCSW

SampType: MBLK Batch ID: R8466

Result

ND

ND

TestCode: EPA Method 300.0: Anions

89.7

RunNo: 8466 SeqNo: 243903

Units: mg/L

0.761

Analyte **Bromide** 

Prep Date:

PQL 0.10

Analysis Date: 2/5/2013

0.50

0.10

0.50

0

0

SPK value SPK Ref Val %REC LowLimit

**HighLimit** 

%RPD

%RPD

**RPDLimit** 

Qual

Sulfate

SampType: LCS Batch ID: R8466

TestCode: EPA Method 300.0: Anions

RunNo: 8466

LowLimit

Analyte **Bromide** 

Analysis Date: 2/5/2013 POL Result

2.4

9.4

2.500

10.00

SPK value SPK Ref Val

SeqNo: 243904 %REC

95.4

94.2

90

90

Units: mg/L HighLimit

110

110

**RPDLimit** Qual

Sulfate

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range

Analyte detected below quantitation limits Sample pH greater than 2

Analyte detected in the associated Method Blank В

H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

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RPD outside accepted recovery limits

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999 11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 1302104-001AMS

SampType: MS

TestCode: EPA Method 300.0: Anions

LowLimit

TestCode: EPA Method 300.0: Anions

83.3

Client ID: **BatchQC** 

Batch ID: R8466

RunNo: 8466

Prep Date: Analysis Date: 2/5/2013

Units: mg/L

SeqNo: 243929 %REC

**RPDLimit** 

Analyte

PQL 0.10 2.4

SPK value SPK Ref Val 0.07800 2.500

93.6

HighLimit 107

Bromide

Result

2.5

Qual

Sample ID 1302104-001AMSD Client ID:

**BatchQC** 

SampType: MSD Batch ID: R8466

RunNo: 8466

Prep Date:

SeqNo: 243930

Units: mg/L

Analyte Bromide

Analysis Date: 2/5/2013

SPK value SPK Ref Val

SPK value SPK Ref Val

SPK value SPK Ref Val

0.07800

0.1469

0.1469

2.500

2.500

%REC LowLimit 95.2 83.3 **HighLimit** 

%RPD **RPDLimit** 

%RPD

Qual

Sample ID 1302103-001BMS

SampType: MS

TestCode: EPA Method 300.0; Anions

1.68

**BatchQC** 

Batch ID: R8466 Analysis Date: 2/5/2013

PQL

0.10

PQL

0.10

RunNo: 8466 SeqNo: 243932

%REC

94.7

Units: mg/L

**HighLimit** 

Qual

Qual

Analyte Bromide

Client ID:

Prep Date:

2.5 Sample ID 1302103-001BMSD SampType: MSD

Result

2.5

Result

83.3 TestCode: EPA Method 300.0: Anions

Client ID: BatchQC

Batch ID: R8466

PQL

0.10

RunNo: 8466

94.8

Units: mg/L

107

107

**RPDLimit** 

**RPDLimit** 20

Prep Date: Analyte

Bromide

Analysis Date: 2/5/2013

2.500

SeqNo: 243933 %REC

LowLimit

83.3

LowLimit

HighLimit

%RPD 0.151

%RPD

Oualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

Sample pH greater than 2

R Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit RPD outside accepted recovery limits Page 18 of 28

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 5ml rb	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW		 iD: R8		F	RunNo: 8	415				
Prep Date:	Analysis D				SeqNo: 2		Units: µg/L			
Analyte	Result	PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0	OI IT VAIGE	OF ICITIES VAL	AUTO	LOWEIIIII	riigitziiiit	70111 13	TW DESITIO	- 450
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#+

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID 5ml rb	SampT	Гуре: МЕ	LK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batcl	h ID: R8	415	F	RunNo: 8	415				
Prep Date:	Analysis E	)ate: 2/	1/2013		SeqNo: 2	42320	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	7.4		10.00		74.1	70	130			
Surr: 4-Bromofluorobenzene	100		10.00		90.7	69.5	130			
Surr: Dibromofluoromethane			10.00		82.6	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			
Sample ID 100ng ics	SamnT	ype: LC	ς	Tos	tCode: El	PA Method	8260B: VOL	ATII EQ	<del> </del>	

Sample ID 100ng ics	SampT	ype: LC	S	Tes	tCode: El	A Method	8260B: VOL	ATILES		
Client ID: LCSW	Batch	ID: R8	415	F	lunNo: 8	415				
Prep Date:	Analysis D	ate: 2/	1/2013	8	SeqNo: 2	42322	Units: μg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.6	70	130			
Toluene	20	1.0	20.00	0	98.3	80	120			
Chiorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	108	73.7	122			
Trichloroethene (TCE)	16	1.0	20.00	0	81.7	70	130			
Surr: 1,2-Dichloroethane-d4	7.5		10.00		75.4	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.7	69.5	130			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

**Client:** 

Western Refining Southwest, Inc.

**Project:** 

**GBR** Annual Sampling

Sample ID 100ng Ics	SampTy	ype: LC	s	Test	Code: El	PA Method	8260B: VOL	ATILES					
Client ID: LCSW	Batch	ID: R8	415	R	lunNo: 8	415							
Prep Date:	Analysis Da	ate: 2/	2/1/2013 SeqNo: 242322 Units: μg/L										
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Surr: Dibromofluoromethane	7.9		10.00		78.7	70	130						
Surr: Toluene-d8	9.2 10.00 92.5 70 130												

Sample ID 1301978-014ams	SampT	ype: MS	<b>i</b>	Tes	Code: El	A Method	8260B: VOL	ATILES		
Client ID: BatchQC	Batch	ID: R8	415	F	tunNo: 8	415				
Prep Date:	Analysis D	ate: 2/	1/2013	S	eqNo: 2	42326	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	130	5.0	100.0	13.50	114	68.5	128			
Chlorobenzene	110	5.0	100.0	0	109	70	130			
1,1-Dichloroethene	120 5.0 100.0			0	0 122 70					
Trichloroethene (TCE)	98	5.0	100.0	0	97.9	61.3	102			
Surr: 1,2-Dichloroethane-d4	43		50.00		87.0	70	130			
Surr: 4-Bromofluorobenzene	48		50.00		95.5	69.5	130			
Sur: Dibromofluoromethane	45		50.00		90.4	70	130			
Surr: Toluene-d8	52		50.00		103	70	130			

Sample ID 1301978-014amsd SampType: MSD TestCode: EPA Method 8260B: VOLATILES											
Client ID: BatchQC	Batch	ID: R8	415	F	RunNo: 8	415					
Prep Date:	Analysis D	ale: 2/	1/2013	5	SeqNo: 2	42327	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Toluene	100	5.0	100.0	13.50	87.2	68.5	128	23.5	20	R	
Chlorobenzene	100	5.0	100.0	0	100	70	130	8.00	20		
1.1-Dichloroethene	110	5.0	100.0	0	110	70	130	10.7	20		
Trichloroethene (TCE)	91	5.0	100.0	0	90.7	61.3	102	7.57	20		
Surr: 1,2-Dichloroethane-d4	41		50.00		81.6	70	130	0	0		
Surr: 4-Bromofluorobenzene	48		50.00		96.3	69.5	130	0	0		
Surr: Dibromofluoromethane	44		50.00		87.6	70	130	0	0		
Surr: Toluene-d8	45		50.00		90.8	70	130	0	0		

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID mb-5964	SampT	Гуре: МВ	LK	Te	stCode: E	PA Method	8270C: PA	ls		
Client ID: PBW	Batcl	h ID: <b>596</b>	4		RunNo: 8	492				
Prep Date: 2/4/2013	Analysis D	Date: 2/6	/2013		SeqNo: 2	44616	Units: µg/l	_		
Analyte	Result	PQL	SPK value	SPK Ref Va	%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	NĐ	0.50								
Fluorene	ND	0.50								
Phenanthrene	ND	0.50								
Anthracene	ND	0.75								
Fluoranthene	ND	0.75								
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	0.75								
Benzo(g,h.i)perylene	ND	0.75								
Indeno(1,2,3-cd)pyrene	ND	1.0								
Surr: Benzo(e)pyrene	15		20.00		74.9	38	145			
Surr: N-hexadecane	63		87.60		72.4	40	107			

Sample ID Ics-5964	Samp1	Type: LC	S	Tes	tCode: El	PA Method	8270C: PAHs	3			
Client ID: LCSW	Batcl	h ID: 59	64	F	RunNo: 8	492					
Prep Date: 2/4/2013	Analysis D	)ate: 2/	6/2013	\$	SeqNo: 2	44617	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	15	0.50	20.00	0	76.7	33.9	106				
1-Methylnaphthalene	16	0.50	20.00	0	79.0	36.3	111				
2-Methylnaphthalene	15	0.50	20.00	0	74.1	36.5	105				
Acenaphthylene	17	0.50	20.00	0	84.0	28.4	122				
Acenaphthene	17	0.50	20.00	0	84.9	32.7	118				
Fluorene	16	0.50	20.00	0	81.2	39.1	119				
Phenanthrene	17	0.50	20.00	0	84.4	47.1	119				
Anthracene	16	0.75	20.00	0	81.5	51.1	117				
Fluoranthene	16	0.75	20.00	0	80.5	40	132				
Pyrene	17	0.50	20.00	0	82.9	43.9	123				
Benz(a)anthracene	18	0.50	20.00	0	87.7	35	163				
Chrysene	17	0.50	20.00	0	84.5	45.9	119				
Benzo(b)fluoranthene	15	0.50	20.00	0	75.7	36.5	137				
Benzo(k)fluoranthene	17	0.50	20.00	0	84.5	37.1	143				
Benzo(a)pyrene	14	0.50	20.00	0	71.7	26.7	144				

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 22 of 28

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID Ics-5964	SampT	ype: LC	S	TestCode: EPA Method 8270C: PAHs									
Client ID: LCSW	Batcl	n ID: 59	64	F	RunNo: 8	492							
Prep Date: 2/4/2013	Analysis D	)ate: 2/	6/2013	8	SeqNo: 2	44617	Units: µg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Dibenz(a,h)anthracene	15	0.75	20.00	0	74.9	31	146						
Benzo(g.h,i)perylene	17	0.75	20.00	0	84.3	30.9	150						
Indeno(1,2,3-cd)pyrene	17 1.0 20.00		0	83.5	35.2	169							
Surr: Benzo(e)pyrene	14		20.00		67.5	38	145						
Surr: N-hexadecane	67		87.60		76.7	40	107						
Sample ID lcsd-5964	SD	Tes	tCode: E	PA Method	8270C: PAHs								
Client ID: LCSS02	Batcl	h ID: 59	64	F	RunNo: 8	492							

Sample ID Icsd-5964	SampType: LCSD TestCode: EPA Method 8270C: PAHs											
Client ID: LCSS02	Batch	1D: 596	64	F	RunNo: 8	492						
Prep Date: 2/4/2013	Analysis D	ate: 2/	6/2013	9	SeqNo: 2	44618	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Naphthalene	15	0.50	20.00	0	74.6	33.9	106	2.78	20			
1-Methylnaphthalene	16	0.50	20.00	0	82.4	36.3	111	4.21	20			
2-Methylnaphthalene	14	0.50	20.00	0	71.7	36.5	105	3.29	20			
Acenaphthylene	17	0.50	20.00	0	84.0	28.4	122	0	20			
Acenaphthene	17	0.50	20.00	0	86.6	32.7	118	1.98	20			
Fluorene	17	0.50	20.00	0	83.4	39.1	119	2.67	20			
Phenanthrene	18	0.50	20.00	0	89.4	47.1	119	5.75	20			
Anthracene	17	0.75	20.00	0	87.2	51.1	117	6.76	20			
Fluoranthene	16	0.75	20.00	0	81.9	40	132	1.72	20			
Ругепе	16	0.50	20.00	0	80.9	43.9	123	2.44	20			
Benz(a)anthracene	18	0.50	20.00	0	88.2	35	163	0.569	20			
Chrysene	18	0.50	20.00	0	89.3	45.9	119	5.52	20			
Benzo(b)fluoranthene	17	0.50	20.00	0	83.1	36.5	137	9.32	20			
Benzo(k)fluoranthene	19	0.50	20.00	0	92.6	37.1	143	9.15	20			
Benzo(a)pyrene	16	0.50	20.00	0	78.5	26.7	144	9.05	20			
Dibenz(a,h)anthracene	18	0,75	20.00	0	89.8	31	146	18.1	20			
Benzo(g.h,i)perylene	18	0.75	20.00	0	91.1	30.9	150	7.75	20			
Indeno(1,2,3-cd)pyrene	18	1.0	20.00	0	89.1	35.2	169	6.49	20			
Surr: Benzo(e)pyrene	15		20.00		76.2	38	145	0	0			
Surr: N-hexadecane	68		87.60		77.2	40	107	0	0			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 1301999-001b dup

SampType: DUP

TestCode: EPA 120.1: Specific Conductance

Client ID: Influent

Batch ID: R8443

PQL

0.010

RunNo: 8443

Analysis Date: 2/4/2013

SeqNo: 243293

Units: µmhos/cm

0.223

Qual

Analyte Conductivity

Client ID:

Prep Date:

Prep Date:

Result 3600

Result

SPK value SPK Ref Val %REC

TestCode: EPA 120.1: Specific Conductance

LowLimit

HighLimit %RPD

**RPDLimit** 20

Sample ID 1302045-001a dup

**BatchQC** 

SampType: DUP Batch ID: R8443 Analysis Date: 2/4/2013

RunNo: 8443

SeqNo: 243306

Units: µmhos/cm

Qual

Analyte Conductivity

1100 0.010

PQL

SPK value SPK Ref Val

%REC LowLimit

HighLimit

%RPD 3.07

**RPDLimit** 20

Qualifiers:

Value exceeds Maximum Contaminant Level.

E, Value above quantitation range

Analyte detected below quantitation limits

Sample pH greater than 2

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits Page 24 of 28

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Annual Sampling** 

Sample ID 1301999-001b dup

SampType: DUP

TestCode: SM4500-H+B: pH

Client ID: Influent

Batch ID: R8443

RunNo: 8443

Prep Date:

Analysis Date: 2/4/2013

SeqNo: 243409

Units: pH units

**HighLimit** 

Analyte

pН

PQL

1.68

SPK value SPK Ref Val %REC LowLimit

**RPDLimit** Qual

Sample ID 1302007-001c dup

SampType: DUP

7.42

TestCode: \$M4500-H+B: pH

%RPD

Client ID:

**BatchQC** 

Batch ID: R8443

RunNo: 8443 SeqNo: 243422

Units: pH units

**RPDLimit** 

Prep Date: Analyte

Analysis Date: 2/4/2013

Result

**PQL** 

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

Qual

н

рΗ

7.38 1.68

Н

Qualifiers:

Value exceeds Maximum Contaminant Level,

Value above quantitation range

Analyte detected below quantitation limits

Sample pH greater than 2

Analyte detected in the associated Method Blank В

 $\mathbf{H}$ Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

Page 25 of 28

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID mb-1

SampType: MBLK

TestCode: SM2320B: Alkalinity

Client ID: PBW

Batch ID: R8443

RunNo: 8443

Prep Date:

Units: mg/L CaCO3

Analysis Date: 2/4/2013

SeqNo: 243260

Analyte

Result **PQL** ND 20 SPK value SPK Ref Val %REC LowLimit HighLimit

%RPD **RPDLimit**  Qual

Total Alkalinity (as CaCO3)

Sample ID Ics-1

Client ID: LCSW

SampType: LCS Batch ID: R8443

RunNo: 8443

Prep Date:

Analysis Date: 2/4/2013

SeqNo: 243261

Units: mg/L CaCO3

Analyte

Result POL

SPK value SPK Ref Val

102.9

102.9

%REC LowLimit

TestCode: SM2320B: Alkalinity

HighLimit

**RPDLimit** 

Qual

Qual

Qual

Qual

S

Total Alkalinity (as CaCO3)

80.00

97.9

%RPD

80.00

80.00

TestCode: SM2320B: Alkalinity

Sample ID 1301a24-001b ms

Client ID: BatchQC

SampType: MS Batch ID: R8443

RunNo: 8443

Prep Date:

Analysis Date: 2/4/2013

SeqNo: 243273

Units: mg/L CaCO3

Analyte

180

PQL SPK value SPK Ref Val

20

92.8

%REC LowLimit HighLimit %RPD 113

**RPDLimit** Qual

Total Alkalinity (as CaCO3)

Sample ID 1301a24-001b msd

SampType: MSD

TestCode: SM2320B: Alkalinity

LowLimit

65.3

65.3

Prep Date:

Batch ID: R8443

RunNo: 8443

Analyte

Analysis Date: 2/4/2013

SeqNo: 243274

91.2

Units: mg/L CaCO3

Total Alkalinity (as CaCO3)

Result PQL 180 20

SPK value SPK Ref Val %REC

HighLimit

**RPDLimit** 

Sample ID mb-2

Client ID: BatchQC

SampType: MBLK

TestCode: SM2320B: Alkalinity

%RPD

%RPD

%RPD

%RPD

0.748

Prep Date:

Client ID: PBW

Total Alkalinity (as CaCO3)

Total Alkalinity (as CaCO3)

Batch ID: R8443 Analysis Date: 2/4/2013 RunNo: 8443 SeqNo: 243277

Units: mg/L CaCO3

**RPDLimit** 

**RPDLimit** 

Analyte

Result **PQL** ND 20

SPK value SPK Ref Val %REC LowLimit

Sample ID Ics-2

SampType: LCS

TestCode: SM2320B: Alkalinity

Client ID: LCSW

Batch ID: R8443

RunNo: 8443

HighLimit

Prep Date:

Result

Analysis Date: 2/4/2013

80.00

80.00

SeqNo: 243278

Units: mg/L CaCO3

Analyte

PQL 20

Batch ID: R8443

POL

20

Analysis Date: 2/4/2013

98.4

SPK value SPK Ref Val %REC

SPK value SPK Ref Val %REC

R

95.16

90 110

HighLimit

**HighLimit** 

Sample ID 1302004-003a ms

Prep Date:

Client ID: BatchQC

SampType: MS

79

Result

120

TestCode: SM2320B: Alkalinity RunNo: 8443

SeqNo: 243281

34.9

LowLimit

65.3

LowLimit

113

Units: mg/L CaCO3

**RPDLimit** Qual

Analyte Total Alkalinity (as CaCO3)

Qualifiers: Value exceeds Maximum Contaminant Level.

E Value above quantitation range В Analyte detected in the associated Method Blank

Not Detected at the Reporting Limit

Page 26 of 28

Analyte detected below quantitation limits Sample pH greater than 2

Н Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1301999

11-Feb-13

Client:

Western Refining Southwest, Inc.

**Project:** 

**GBR Annual Sampling** 

Sample ID 1302004-003a msd

SampType: MSD

TestCode: SM2320B: Alkalinity

Batch ID: R8443

RunNo: 8443

Client ID: **BatchQC** Prep Date:

Analysis Date: 2/4/2013

SeqNo: 243282

Units: mg/L CaCO3

Analyte

Result **PQL** 

SPK value SPK Ref Val %REC

LowLimit

HighLimit

%RPD

**RPDLimit** 

Qual S

Total Alkalinity (as CaCO3)

120

20

80.00

95.16

29.0

65.3

113

3.88

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

Sample pH greater than 2

Analyte detected in the associated Method Blank В

 $\mathbf{H}$ Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

11-Feb-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Annual Sampling

Sample ID MB-5947

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW

Batch ID: 5947

RunNo: 8440

Prep Date: 2/1/2013

Analysis Date: 2/4/2013

SeqNo: 243197 %REC

Units: mg/L **HighLimit** 

%RPD

**RPDLimit** 

Analyte Total Dissolved Solids

**PQL** ND 20.0

TestCode: SM2540C MOD: Total Dissolved Solids

Qual

Sample ID LCS-5947 Client ID: LCSW

SampType: LCS Batch ID: 5947

RunNo: 8440

LowLimit

Units: mg/L

%RPD

Analyte

Prep Date: 2/1/2013

Result

Result

1030

1020

Analysis Date: 2/4/2013 PQL

SeqNo: 243198

SPK value SPK Ref Val

13.00

13.00

1000

1000

1000

%REC

HighLimit %RPD **RPDLimit** 

Qual

Total Dissolved Solids

2/1/2013

SampType: MS

20.0

TestCode: SM2540C MOD: Total Dissolved Solids

102

Sample ID 1301992-002AMS

Client ID: **BatchQC** 

Batch ID: 5947 Analysis Date: 2/4/2013

PQL

20.0

20.0

RunNo: 8440 SeqNo: 243210

%REC

102

Units: mg/L

Analyte

Prep Date:

Total Dissolved Solids

SampType: MSD

TestCode: SM2540C MOD: Total Dissolved Solids

HighLimit

120

Sample ID 1301992-002AMSD Client ID:

**BatchQC** 2/1/2013 Batch ID: 5947

RunNo: 8440

%REC

102

Units: mg/L

**HighLimit** 

**RPDLimit** 

**RPDLimit** 

Prep Date: Analyte Total Dissolved Solids Analysis Date: 2/4/2013 Result PQL

1030

SeqNo: 243211

80

%RPD

0.0969

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit
- Page 28 of 28
- RPD outside accepted recovery limits



4901 Hawkins NE Albuquerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-410;

Website: www.hallenvironmental.com

Albuquerque, NM 87105 Sample Log-In Check List

						-	_	
	ent Name: ceived by/date	10-	outhwest, Inc. Bloomfield	Work O	rder N	tumi	ber:	1301999
	sciroa byroatt	(1)	- UIOIII				-	
Log	ged By:	Michelle Garcia	1/31/2013 10:10:00	AM			47/	ikullo Granic
Cor	ripleted By:	Michelle Garcia	1/31/2013 10:33:07	AM			-174	ikuli Gruin
Rev	riewed By:							
<u>Cha</u>	ain of Cust	tody						
1.	Were seals i	intact?		Yes		No		Not Present 🗹
2.	Is Chain of C	Custody complete?		Yes	V	No		Not Present
3.	How was the	sample delivered?		Cou	rier			
Log	<u>ı İn</u>							
4.	Coolers are	present? (see 19. for	cooler specific information)	Yes	V	No		NA 🗆
5.	Was an atte	mpt made to cool the	samples?	Yes	V	No		NA 🗀
6.	Were all san	nples received at a te	mperature of >0° C to 6.0°C	Yes	V	No		NA 🗆
7.	Sample(s) in	n proper container(s)?		Yes		No		
8.	Sufficient sa	mple volume for indic	ated test(s)?		$\mathbf{V}$			,
9.			IG) properly preserved?	Yes		No		
		ative added to bottles		Yes	=	No	V	NA 🗆
11.	VOA vials ha	ave zero headspace?		Yes	V	No		No VOA Viais
12,	Were any sa	imple containers rece	ved broken?	Yes		Νo	V	
13.		work match bottle labe pancies on chain of c		Yes		No		# of preserved bottles checked for pH:
14:	Are matrices	correctly identified or	Chain of Custody?	Yes	V	No		(Ca or >12 untess noted)
15.	Is it clear wh	at analyses were requ	ested?	Yes	V	No		Adjusted NO
16.		ding times able to be a customer for authoriza		Yes	V	No		Checked by:
Spe		ling (if applicable						
		otified of all discrepan		Yes		No		NA 🗹
	Person	Notified:	Date:					
	By Who		Via:	↓ ☐ eMa		] ph	one	Fax In Person
	Regard	- N				,	-	
		natructions:	·					
18.	Additional re			11		_		
19.	Cooler Infor	Temp °C Condi		Seal Da	te		Signe	ed By
	<u> </u>	1.0 Good	Yes					

HALL ENVIRONMENTAL	ANALYSIS LABORATORY	<del>=</del>	4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107	Analysis	(*(	OS' <sup>†</sup> Od	(1.8 (1.4) (12 0750 (12808)	00 t 8 10 8 10 8 lo 8 los	EDB (Method DB (Method DB1's (8310 Injons (F,Cl, D81 Pesticic NON (Semi-V	다 금 용 용	7	\$ X	N N				0	10:10
me:	Project Name	Silomos I Sund	Control of the contro		(Vlr	- Gas on	) H9T	Ner Bergin	Container Preservative Type and # Type Type PH 80158	3	War, 2057 Vallows - 003	41 ans 2	31/13			i	Miles I w. Walle 1967 15cc Prease	inheeled to other actividated laborapries. This serves as
Chain-of-Custody Record		Malling Address: 11/Cg 4990	Bloomfeld NM 87413	Phone #:		QAVQC Package:  Calour Devel 4 (Full Validation)	D Other	□ EDD (Type)	Date Time Matrix Sample Request ID	fluent	130/131307 GW EFF 1420+	Fried Blank	Faeld			Date: Time: Refinmished hu-	156.6 Time: Relinquished by:	y, satipples submitted to Hall Environmental may be subcor

TABLE 1

### 2012 SAMPLING SCHEDULE FORMER GIANT BLOOMFIELD REFINERY WESTERN REFINING

Sample ID	ANNUALLY (Jan)	Notes:
System Influent	VOC	Voc
	GWC	method 8260
	VOC	
System Effluent	GWC	PAH
	METALS ^	method 8270
	PAH	
		GWC
		pH <sup>↑</sup>
		EC
		TDS
		alkalinity
		hardness
	4	anions
		bromide
		chloride,
12 15 14 12		sulfate
	Z .	fluoride
		nitrate/nitrite
		phosporuk
		cations
	-	calcium
		iron
		magnesiuni
and the same of the same of	-	manganese
	7	potassium
	The state of the s	sodium
9 1		33000
	4 5	Metals
	F-15	barium
	The same of the sa	beryllium
		cadmium
	9	chromium
		copper
1967		lead
The same of the sa	2 5	nicket
		silver
	The same of the sa	zinc
		antimony
	CONTRACT OF THE PARTY OF THE PA	arsenic
		selenium
1923 12:	Citize .	thallium
		mercury





Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

May 14, 2013

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX

RE: GBR

OrderNo.: 1304981

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/24/2013 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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. 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.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

artist

Albuquerque, NM 87109

# **Analytical Report**

Lab Order 1304981

Date Reported: 5/14/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

GBR Project:

Client Sample ID: Influent

Collection Date: 4/23/2013 3:13:00 PM Received Date: 4/24/2013 9:54:00 AM

Troject. Obk	1.77		Concetton Pare: 4/23/2013 3:13:00			
Lab ID: 1304981-001	Matrix: A	AQUEOUS	Received	Date: 4/2	4/2013 9:54:00 AM	
Analyses	Result	RL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	; JRR
Fluoride	0.67	0,10	mg/L	1	4/24/2013 10:58:21 PM	R10108
Chloride	76	10	mg/L	20	4/24/2013 11:35:36 PM	R10108
Nitrogen, Nitrite (As N)	ND	0.10	mg/L	1	4/24/2013 10:58:21 PM	R10108
Bromide	0.33	0.10	mg/L	1	4/24/2013 10:58:21 PM	R10108
Nitrogen, Nitrate (As N)	1.7	0.10	mg/L	1	4/24/2013 10 58 21 PM	R10108
Phosphorus, Orthophosphate (As P)	ND	10	mg/L	20	4/24/2013 11:35:36 PM	R10108
Sulfate	1600	25 *	mg/L	50	5/1/2013 2:40:34 PM	R10260
EPA METHOD 200.7: METALS					Analyst	: JLF
Calcium	390	10	mg/L	10	5/7/2013 10:57:59 PM	R10460
Iron	0.066	0.020	mg/L	1	5/7/2013 10:53:49 PM	R10460
Magnesium	31	1.0	mg/L	1	5/7/2013 10:53:49 PM	R10460
Manganese	0.43	0.0020 *	mg/L	1	5/7/2013 10:53:49 PM	R10460
Potassium	2.5	1.0	mg/L	1	5/7/2013 10:53:49 PM	R10460
Sodium	410	10	mg/L	10	5/7/2013 10:57:59 PM	R10460
SM2340B: HARDNESS					Analys	JLF
Hardness (As CaCO3)	1100	6.6	mg/L	1	5/7/2013 3:25:00 PM	R10460
EPA METHOD 8260B: VOLATILES					Analys	: RAA
Benzene	ND	1.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
Toluene	ND	1.0	րց/Լ	1	4/26/2013 1:39:53 AM	R10124
Ethylbenzene	ND	1.0	µg/L	1	4/26/2013 1:39:53 AM	R10124
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	4/26/2013 1:39:53 AM	R10124
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	4/26/2013 1:39:53 AM	R10124
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	4/26/2013 1:39:53 AM	R10124
Naphthalene	ND	2.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
1-Methylnaphthalene	ND	4.0	µg/L	1	4/26/2013 1:39:53 AM	R10124
2-Methylnaphthalene	ND	4.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
Acetone	ND	10	µg/L	1	4/26/2013 1:39:53 AM	R10124
Bromobenzene	ND	1.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
Bromodichloromethane	ND	1.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
Bromoform	ND	1,0	µg/L	1	4/26/2013 1:39:53 AM	R10124
Bromomethane	ND	3,0	μg/L	1	4/26/2013 1:39:53 AM	R10124
2-Butanone	ND	10	μg/L	1	4/26/2013 1:39:53 AM	R10124
Carbon disulfide	ND	10	μg/L	1	4/26/2013 1:39:53 AM	R10124
Carbon Tetrachloride	ND	1.0	μg/L	1	4/26/2013 1:39.53 AM	R10124
Chlorobenzene	ND	1.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
Chloroethane	ND	2.0	μg/L	1	4/26/2013 1:39:53 AM	R10124
Chloroform	ND	1.0	µg/L	1	4/26/2013 1:39:53 AM	R10124
Chloromethane	ND	3.0	μg/L	1	4/26/2013 1:39:53 AM	R10124

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

P Sample pH greater than 2

Reporting Detection Limit

Analyte detected in the associated Method Blank

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits R

Spike Recovery outside accepted recovery funds

### **Analytical Report**

Lab Order 1304981

Date Reported: 5/14/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Influent

Project: GBR

Collection Date: 4/23/2013 3:13:00 PM

Lab ID:

1304981-001

Matrix: AQUEOUS

Received Date: 4/24/2013 9:54:00 AM

Analyses 4 4 4 4 4 4	Result	RL	Qual U	Jnits	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES	33				111	Analyst	: RAA
2-Chlorotoluene	ND	1.0	1	µg/L	1	4/26/2013 1:39:53 AM	R1012
4-Chlorotoluene	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R1012
cis-1,2-DCE	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
cis-1,3-Dichloropropene	ND	1.0	1	μg/L	1	4/26/2013 1:39:53 AM	R1012
1,2-Dibromo-3-chloropropane	ND	2.0	1	μg/L	1	4/26/2013 1:39:53 AM	R1012
Dibromochloromethane	ND	1.0	_1	μg/L	1	4/26/2013 1:39:53 AM	R1012
Dibromomethane	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R1012
1,2-Dichlorobenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
1,3-Dichlorobenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,4-Dichlorobenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
Dichlorodifluoromethane	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,1-Dichloroethane	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,1-Dichloroethene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,2-Dichloropropane	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,3-Dichloropropane	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
2,2-Dichloropropane	ND	2.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,1-Dichloropropene	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R1012
Hexachlorobutadiene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
2-Hexanone	ND	10		μg/L	1	4/26/2013 1:39:53 AM	R1012
Isopropylbenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
4-Isopropyltoluene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
4-Methyl-2-pentanone	ND	10		μg/L	1	4/26/2013 1:39:53 AM	R1012
Methylene Chloride	ND	3.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
n-Butylbenzene	ND	3.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
n-Propylbenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
sec-Butylbenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
Styrene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
tert-Butylbenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R1012
1,1,2,2-Tetrachloroethane	ND	2.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R10124
trans-1,2-DCE	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R10124
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R10124
1,2,3-Trichlorobenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R10124
1,2,4-Trichlorobenzene	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
1,1,1-Trichloroethane	ND	1.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
1,1,2-Trichloroethane	ND	1.0	-	µg/L	1	4/26/2013 1:39:53 AM	R1012
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R1012
Trichlorofluoromethane	ND	1.0		µg/L	1	4/26/2013 1:39:53 AM	R1012
1,2,3-Trichloropropane	ND	2.0		μg/L	1	4/26/2013 1:39:53 AM	R1012
Vinyl chloride	ND	1.0		μ <b>g/L</b>	1	4/26/2013 1:39:53 AM	R1012
Xylenes, Total	ND	1.5		µg/L	i	4/26/2013 1:39:53 AM	R10124

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
  - Spike Recovery outside accepted recovery limits 2 of 18

### **Analytical Report** Lab Order 1304981

Date Reported: 5/14/2013

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project:

Client Sample ID: Influent

Collection Date: 4/23/2013 3:13:00 PM

Matrix: AQUEOUS Received Date: 4/24/2013 9:54:00 AM Lab ID: 1304981-001

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst	: RAA
Surr: 1,2-Dichloroethane-d4	92.1	70-130		%REC	1	4/26/2013 1:39:53 AM	R10124
Surr: 4-Bromofluorobenzene	95.5	69.5-130		%REC	1	4/26/2013 1:39:53 AM	R10124
Surr: Dibromofluoromethane	93.7	70-130		%REC	1	4/26/2013 1:39:53 AM	R10124
Surr: Toluene-d8	96.1	70-130		%REC	1	4/26/2013 1:39:53 AM	R10124
SM2510B: SPECIFIC CONDUCTANCE						Analyst	: JML
Conductivity	3200	0.010		µmhos/cm	1	4/24/2013 6:56:45 PM	R10173
SM4500-H+B: PH						Analyst	: JML
pH	7.43	1.68	Н	pH units	1	4/24/2013 6:56:45 PM	R10173
SM2320B: ALKALINITY						Analyst	: JML
Bicarbonate (As CaCO3)	320	20		mg/L CaCO3	1	4/24/2013 6:56:45 PM	R10173
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/24/2013 6:56:45 PM	R10173
Total Alkalinity (as CaCO3)	320	20		mg/L CaCO3	1	4/24/2013 6:56:45 PM	R10173
SM2540C MOD: TOTAL DISSOLVED S	OLIDS					Analyst	: KS
Total Dissolved Solids	2780	20.0		mg/L	1	4/30/2013 5:48:00 PM	7202

- Value exceeds Maximum Contaminant Level,
- E Value above quantitation range
- 1 Analyte detected below quantitation limits
- p Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 3 of 18

### **Analytical Report** Lab Order 1304981 Date Reported: 5/14/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Effluent

Project: **GBR**  Collection Date: 4/23/2013 3:28:00 PM

Lab ID: 1304981-002 Matrix: AQUEOUS

Received Date: 4/24/2013 9:54:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	JRR
Fluoride	0.66	0.10	mg/L	1	4/24/2013 11:48:01 PM	R10108
Chloride	76	10	mg/L	20	4/25/2013 12:00:26 AM	R10108
Nitrogen, Nitrite (As N)	ND	0.10	mg/L	1	4/24/2013 11:48:01 PM	R10108
Bromide	0.32	0.10	mg/L	1	4/24/2013 11:48:01 PM	R10108
Nitrogen, Nitrate (As N)	1.7	0.10	mg/L	1	4/24/2013 11:48:01 PM	R10108
Phosphorus, Orthophosphate (As P)	ND	10	mg/L	20	4/25/2013 12:00:26 AM	R10108
Sulfate	1600	25 •	mg/L	50	5/1/2013 2:52:59 PM	R10260
EPA METHOD 200.7: METALS					Analyst	JLF
Calcium	390	10	mg/L	10	5/7/2013 11:21:18 PM	R10460
Iron	ND	0.020	mg/L	1	5/7/2013 11:17:09 PM	R10460
Magnesium	30	1.0	mg/L	1	5/7/2013 11:17:09 PM	R10460
Manganese	0.43	0.0020 *	mg/L	1	5/7/2013 11:17:09 PM	R10460
Potassium	2.5	1.0	mg/L	1	5/7/2013 11:17:09 PM	R10460
Sodium	420	10	mg/L	10	5/7/2013 11:21:18 PM	R10460
SM2340B: HARDNESS					Analyst	JLF
Hardness (As CaCO3)	1100	6.6	mg/L	1	5/7/2013 3:25:00 PM	R10460
EPA METHOD 8260B: VOLATILES					Analyst	RAA
Benzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Toluene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Ethylbenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Naphthalene	ND	2.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1-Methylnaphthalene	ND	4.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
2-Methylnaphthalene	ND	4.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Acetone	ND	10	μg/L	1	4/26/2013 2:35:31 AM	R10124
Bromobenzene	ND	1,0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Bromodichloromethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Bromoform	ND	1.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Bromomethane	ND	3.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
2-Butanone	ND	10	μg/L	1	4/26/2013 2 35 31 AM	R10124
Carbon disulfide	ND	10	µg/L	1	4/26/2013 2:35:31 AM	R10124
Carbon Tetrachloride	ND	1.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Chlorobenzene	ND	1.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Chloroethane	ND	2.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Chloroform	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Chloromethane	ND	3.0	μg/L	1	4/26/2013 2:35:31 AM	R10124

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 4 of 18

### **Analytical Report** Lab Order 1304981

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/14/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Effluent

Project:

Collection Date: 4/23/2013 3:28:00 PM

1304981-002 Lab ID:

Matrix: AQUEOUS

Received Date: 4/24/2013 9:54:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	: RAA
2-Chiorotoluene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
4-Chlorotoluene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
cis-1,2-DCE	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	4/26/2013 2:35 31 AM	R10124
Dibromochloromethane	ND	1,0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Dibromomethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,2-Dichlorobenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,3-Dichlorobenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,4-Dichlorobenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
Dichlorodifluoromethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,1-Dichloroethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,1-Dichloroethene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,2-Dichloropropane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R10124
1,3-Dichloropropane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
2,2-Dichloropropane	ND	2.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,1-Dichloropropene	ND	1.0	µg/L	1	4/26/2013 2:35:31 AM	R10124
Hexachlorobutadiene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
2-Hexanone	ND	10	μg/L	1	4/26/2013 2:35:31 AM	R10124
Isopropylbenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
4-Isopropyltoluene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
4-Methyl-2-pentanone	ND	10	μg/L	1	4/26/2013 2:35:31 AM	R1012
Methylene Chloride	ND	3.0	µg/L	1	4/26/2013 2:35:31 AM	R1012
n-Butylbenzene	ND	3.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
n-Propylbenzeле	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
sec-Butylbenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
Styrene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
tert-Butylbenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
trans-1,2-DCE	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,1,1-Trichloroethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,1,2-Trichloroethane	ND	1,0	μg/L	1	4/26/2013 2:35:31 AM	R1012
Trichloroethene (TCE)	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
Trichlorofluoromethane	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
1,2,3-Trichloropropane	ND	2.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
Vinyl chloride	ND	1.0	μg/L	1	4/26/2013 2:35:31 AM	R1012
Xylenes, Total	ND	1.5	μg/L	1	4/26/2013 2:35:31 AM	R1012

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- HHolding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 5 of 18

### Analytical Report Lab Order 1304981

Date Reported: 5/14/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR

Lab ID: 1304981-002

Client Sample ID: Effluent

Collection Date: 4/23/2013 3:28:00 PM

Received Date: 4/24/2013 9:54:00 AM

Analyses	PRODUCTION AND	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METH	OD 8260B: VOLATILES				11 4	Analyst	: RAA
Surr: 1,2	?-Dichloroethane-d4	91.5	70-130	%REC	1	4/26/2013 2:35:31 AM	R10124
Surr: 4-E	Bromofluorobenzene	105	69.5-130	%REC	1	4/26/2013 2:35:31 AM	R10124
Surr: Dib	promofluoromethane	92.5	70-130	%REC	1	4/26/2013 2:35:31 AM	R10124
Surr: Tol	luene-d8	95.2	<b>70</b> -130	%REC	1	4/26/2013 2:35:31 AM	R10124
SM2510B:	SPECIFIC CONDUCTANCE					Analyst	: JML
Conductivit	ty	3200	0.010	µmhos/cm	1	4/24/2013 7:11:37 PM	R10173
SM4500-H+	·B: PH					Analyst	: JML
pH		7.40	1,68	H pH units	1	4/24/2013 7:11:37 PM	R10173
SM2320B:	ALKALINITY					Analyst	: JML
Bicarbonate	e (As CaCO3)	320	20	mg/L CaCO3	1	4/24/2013 7:11:37 PM	R10173
Carbonate	(As CaCO3)	ND	2.0	mg/L CaCO3	1	4/24/2013 7:11:37 PM	R10173
Total Alkali	inity (as CaCO3)	320	20	mg/L CaCO3	1	4/24/2013 7:11:37 PM	R10173
SM2540C N	MOD: TOTAL DISSOLVED SO	LIDS				Analyst	KS
Total Disso	olved Solids	2760	20.0	* mg/L	1	4/30/2013 5:48:00 PM	7202

Matrix: AQUEOUS

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: **GBR**  **Collection Date:** 

Lab ID:

1304981-003

Matrix: TRIP BLANK

Received Date: 4/24/2013 9:54:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	RAA
Benzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Toluene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Ethylbenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,2,4-Trimethylbenzene	ND	1,0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,3,5-Trimethylbenzene	ND	1.0	μ <b>g/</b> L	1	4/26/2013 3:03:31 AM	R10124
1,2-Dichloroethane (EDC)	ND	1.0	μ <b>g</b> /L	1	4/26/2013 3:03:31 AM	R10124
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Naphthalene	ND	2.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1-Methylnaphthalene	ND	4.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
2-Methylnaphthalene	ND	4.0	µg/L	1	4/26/2013 3:03:31 AM	R10124
Acetone	ND	10	µg/L	1	4/26/2013 3:03:31 AM	R10124
Bromobenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Bromodichloromethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Bromoform	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Bromomethane	ND	3.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
2-Butanone	ND	10	μg/L	1	4/26/2013 3:03:31 AM	R10124
Carbon disulfide	ND	10	μg/L	1	4/26/2013 3:03:31 AM	R10124
Carbon Tetrachloride	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Chlorobenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Chloroethane	ND	2.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Chloroform	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Chloromethane	ND	3.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
2-Chlorotoluene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
4-Chlorotoluene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
cis-1.2-DCE	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
Dibromochloromethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
Dibromomethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1.2-Dichlorobenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1,3-Dichtorobenzene	ND	1:0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1,4-Dichlorobenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
Dichlorodifluoromethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1.1-Dichloroethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1,1-Dichloroethene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1,2-Dichloropropane	ND	1.0	µg/L	1	4/26/2013 3:03:31 AM	R1012
1.3-Dichloropropane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
2,2-Dichloropropane	ND	2.0	μg/L	1	4/26/2013 3:03:31 AM	R1012
1,1-Dichloropropene	ND	1.0	µg/L	1	4/26/2013 3:03:31 AM	R1012
Hexachlorobutadiene	ND	1.0	µg/L	1	4/26/2013 3:03:31 AM	R1012
2-Hexanone	ND	10	μg/L	1	4/26/2013 3:03:31 AM	R1012

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded H
- Not Detected at the Reporting Limit ND
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits 7 of 18

# Analytical Report Lab Order 1304981

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/14/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR

**Collection Date:** 

Lab ID:

1304981-003

Matrix: TRIP BLANK

Received Date: 4/24/2013 9:54:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	RAA
Isopropylbenzene	ND	1.0	μg/L	_ 1	4/26/2013 3:03:31 AM	R10124
4-Isopropyltoluene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
4-Methyl-2-pentanone	ND	10	μg/L		4/26/2013 3:03:31 AM	R10124
Methylene Chloride	ND	3.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
n-Butylbenzene	ND	3.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
n-Propylbenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
sec-Butylbenzene	= ND	1.0	μg/L	_ 1	4/26/2013 3:03:31 AM	R10124
Styrene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
tert-Butylbenzene	ND	1.0	µg/L	1	4/26/2013 3:03:31 AM	R10124
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Tetrachloroethene (PCE)	NĐ	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
trans-1,2-DCE	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,1,1-Trichloroethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,1,2-Trichloroethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Trichloroethene (TCE)	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
Trichlorofluoromethane	ND	1.0	μg/L	1	4/26/2013 3:03:31 AM	R10124
1,2,3-Trichloropropane	ND	2.0	µg/L	1	4/26/2013 3:03:31 AM	R10124
Vinyl chloride	ND	1.0	µg/L	1	4/26/2013 3:03:31 AM	R10124
Xylenes, Total	ND	1.5	μg/L	1	4/26/2013 3.03 31 AM	R10124
Surr: 1,2-Dichloroethane-d4	92.3	70-130	%REC	1	4/26/2013 3.03 31 AM	R10124
Surr: 4-Bromofluorobenzene	102	69.5-130	%REC	1	4/26/2013 3 03 31 AM	R10124
Surr: Dibromofluoromethane	94.1	70-130	%REC	1	4/26/2013 3 03 31 AM	R10124
Surr: Toluene-d8	94.2	70-130	%REC	1	4/26/2013 3 03 31 AM	R10124

Ou	alifi	iers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits



VOUS CAR OF CHOICE

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5859 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

L632634-01

Bst. 1970

REPORT OF ANALYSIS

Anne Thorne Hall Environmental Analysis Laborat

4901 Hawkins NE Albuquerque, NM 87109

May 03, 2013

ESC Sample # :

Date Received Description

April

26, 2013

Sample ID

1304981-001D INFLUENT

Site ID :

Project # :

Collected By : Collection Date :

04/23/13 15:13

Date Dil. Result Det. Limit Units Method Parameter BDL 0.10 mq/l365.4 05/03/13 1 Phosphorus, Total

BDL - Below Detection Limit Det. Limit - Practical Quantitation Limit(PQL)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/03/13 16:16 Printed: 05/03/13 16:27



UDIONO TO BALL AUGU

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 03, 2013

Anne Thorne Hall Environmental Analysis Laborat 4901 Hawkins NE Albuquerque, NM 87109

Date Received : April 26, 2013 Description :

Sample ID : 1304981-002D EFFLUENT

Collected By : Collection Date : 04/23/13 15:28

ESC Sample # : L632634-02

Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	D11.
Phosphorus, Total	BDL	0.10	mg/l	365.4	05/03/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/03/13 16:16 Printed: 05/03/13 16:27



ин сав ол енотер

Hall Environmental Analysis Laboratory Anne Thorne 4901 Hawkins NE

Albuquerque, NM 87109

12065 Lebanon Rd. T2005 Departon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L632634

May 03, 2013

Analyte	Result		borat Jnita	ory Bla	nk Rec		Limit		Batch I	Date Analyzed
Phosphorus, Total	<.1.	A POTOT	ng/1	Sec.	17:1	Polymer File	Merkings	athe!	WG658962 C	5/03/13 11:5
Analyte	Units	Result		licate Duplica	te	RPD	Limit		Ref Samp	Batch
Phosphorus, Total Phosphorus, Total	mg/1 mg/1	2.30		2.00	la in a	14.0	20 20		L633082-0	
Analyte	Unita	Labora		Control	Samp		% Rec		Limit	Batch
Phosphorus, Total	mg/1	in.	W.S		0.965	TTT I	96.5	-	90-110 .	WG65896
Analyte	Units	Laboratory Result	Contr Ref	ol Samp	le Du	plicate	Limit	RPD	Limi	lt Batch
Phosphorus, Total	mg/l	0.953	0:96	5 . 7	95.0	4.5.5	90-110	1.25	20	WG65896
Analyte	Units	MS Ros	Matri Ref	k Spike Ros	TV	* Rec	Limit		Ref Samp	Batch
Phosphorus, Total	mg/l	2.33	Ò.	1000	2.5	93.2	90-110		L632634-0	WG65896
Analyte	Units		k Špi Ref	ke Dupl		Limit	RPD	Limit	Ref Samp	Batch
Phosphorus, Total	щg/1	2,32	2.33	92.8	1-600	90-110	0.430	20	L632634-0	2 WG65896

Batch number /Run number / Sample number cross reference

WG658962: R2651560: L632634-01 02

<sup>\* \*</sup> Calculations are performed prior to rounding of reported values.

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID MB	Samp	Type: MI	BLK	Tes	tCode: E	PA Method	200.7: Metals			
Client ID: PBW	Bato	h ID: R1	0460		RunNo: 1	0460				
Prep Date:	Analysis	Date: 5	7/2013		SeqNo: 2	95594	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
ron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
otassium	ND	1.0								
Sodium	ND	1.0								

Sample ID ECS	Janip	Type. Lo	-3	163	Code. E	r A Meulou	200.7. Metal:	•			
Client ID: LCSW	Bato	h ID: R1	0460	all the F	RunNo: 1	0460					
Prep Date:	Analysis I	Date: 5/	7/2013		SeqNo: 2	95595	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Calcium	49	1.0	50.00	0	97.8	85	115			_	
Iron	0.49	0.020	0.5000	0	98.5	85	115				
Magnesium	50	1.0	50.00	0	99.5	85	115				
Manganese	0.48	0.0020	0.5000	0	96.6	85	115				
Potassium	48	1.0	50.00	0	96.7	85	115				
Sodium	49	1.0	50.00	0	97.4	85	115				

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Page 9 of 18

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Western Refining Southwest, Inc.

0.94

2.4

2.5

5.0

0.10

0.10

0.10

0.50

1.000

2.500

2.500

5.000

Project:

Nitrogen, Nitrite (As N)

Nitrogen, Nitrate (As N)

Phosphorus, Orthophosphate (As P

**Bromide** 

**GBR** 

Sample ID MB	SampT	SampType: MBLK TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch	ı ID; R1	0108	F	tunNo: 1	0108				
Prep Date:	Analysis C	)ate: 4/	24/2013	S	eqNo: 2	B <b>794</b> 7	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	Sampl	Type: LC	S	Tes	tCode: El	PA Method	300.0: Anion:	5		
Client ID: LCSW	Batcl	h ID: R1	0108	F	RunNo: 1	0108				
Prep Date:	Analysis [	Date: 4/	24/2013	\$	SeqNo: 2	87948	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	99.0	90	110	•		•
Chloride	4.8	0.50	5.000	0	95.7	90	110			

0

0

0

0

94.4

98.0

100

100

90

90

90

90

110

110

110

110

Sample ID MB	SampType: MBLK			Tes	Code: El	PA Method	300.0: Anions	;			
Client ID: PBW	Batch ID: R10108			F	lunNo: 1	0108					
Prep Date:	Analysis Date: 4/24/2013			SeqNo: 288003			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, Orthophosphale (As P	ND	0.50									

Sample ID LCS	SampT	ype: LC	S	TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch	ID: R1	0108	F	RunNo: 10	0108					
Prep Date:	Analysis D	ate: 4/	24/2013	9	ieqNo: 2	88005	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluonde	0.50	0.10	0.5000	0	99.5	90	110				
Chloride	4.8	0.50	5.000	0	95.6	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	97.8	90	110				
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	100	90	110				

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
   S Spike Recovery outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID LCS	SampT	ype: LC	S	Tes	tCode; El	PA Method	300.0: Anion	S		#1W 1
Client ID: LCSW	Batch	ID: R1	0108	F	RunNo: 1	0108				
Prep Date:	Analysis D	ate: 4/	24/2013		SeqNo: 2	88005	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	5.0	0.50	5,000	0	99.5	90	110			14

Sample ID 1304981-001BMS	SampT	ype: MS	3	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID: Influent	Batch	i ID: R1	0108	F	RunNo: 1	0108				
Prep Date:	Analysis D	ale: 4/	24/2013	\$	SeqNo: 2	88026	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1,1	0.10	0.5000	0,6666	85.6	76.6	110			
Nitrogen, Nitrite (As N)	0.87	0.10	1.000	0	87.1	72.5	111			
Bromide	2.7	0.10	2.500	0.3269	94.2	83.3	107			
Nitrogen, Nitrate (As N)	4.2	0.10	2.500	1.677	102	90.4	113			

Sample ID 1304981	-nonman 29mb	iype: wis	חנ	res	(Code: El	PA Method	300.0: Anions	•			
Client ID: Influent	Batc	h ID: R1	0108	F	RunNo: 1	0108					
Prep Date:	Analysis I	Date: 4/.	24/2013	S	SeqNo: 2	88027	Units: mg/L	34			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluoride	1.1	0.10	0.5000	0.6666	86.2	76.6	110	0.265	20		
Nitrogen, Nitrite (As N)	0.87	0.10	1:000	0	87.2	72.5	111	0.161	20		
Bromide	2.7	0.10	2.500	0.3269	94.0	83.3	107	0.194	20		
Nitrogen, Nitrate (As N)	4.2	0.10	2.500	1.677	102	90.4	113	0.0592	20		

Sample ID MB	Samp1	ype: ME	BLK	Tes	tCode: E	PA Method	300.0: Anion	s		
Client ID: PBW	Batch	ı ID: R1	0260	F	RunNo: 1	0260				
Prep Date:	Analysis D	ate: 5/	1/2013	5	SeqNo: 2	92611	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	ი 50								

Sample ID LCS	SampType: LCS	TestCode: EPA Method	1 300.0: Anions
Client ID: LCSW	Batch ID: R10260	RunNo: 10260	
Prep Date:	Analysis Date: 5/1/2013	SeqNo: 292612	Units: mg/L
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Sulfate	9.6 0.50 10.0	0 0 95.9 90	110

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- II Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID 5ml rb	SampT	уре: МЕ	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	1D: R1	0124	F	RunNo: 1	0124				
Prep Date:	Analysis D	ate: 4/	25/2013		SeqNo: 2	88477	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					100			
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 Tetrachlonde	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
as-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								
Dich orodifluoromethane	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								
	_	-								

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID 5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R10124			RunNo: 10124						
Prep Date:	Analysis Date: 4/25/2013		SeqNo: 288477			Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropyibenzene	ND	1,0								
4-Isopropyltoluene	ND	1.0								
4-Methyi-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1,0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2,0								
Tetrachloroethene (PCE)	ND	1,0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	69.5	130			
Surr: Dibromofluoromethane	9.2		10.00		92.1	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

Sample ID 100ng Ics	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R10124			F							
Prep Date:	Analysis Date: 4/25/2013			s	SeqNo: 2	88478	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	21	1.0	20.00	0	103	80	120				
Chlorobenzene	20	1.0	20.00	0	100	70	130				
1,1-Dichloroethene	19	1.0	20.00	0	95.9	85.8	133				
Trichloroethene (TCE)	20	1.0	20.00	0	99.0	70	130				

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

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# Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

GBR

Sample ID 100ng Ics	SampType: LCS Batch ID: R10124			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW				RunNo: 10124 SeqNo: 288478						
Prep Date:	Analysis Date: 4/25/2013		Units: µg/L							
Analyle	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.5	70	130			
Surr: 4-Bromo uorobenzene	10		10.00		103	69.5	130			
Surr Dibromofluoromethane	9.6		10.00		95.7	70	130			
Sur: Toluene-d8	9.2		10.00		92.1	70	130			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level,
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- II Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

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### Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

Sample ID 1304981-002Bdup

SampType: dup

TestCode: SM2510B: Specific Conductance

Client ID: Effluent

Batch ID: R10173

RunNo: 10173

Prep Date:

Units: µmhos/cm

Analyte

Analysis Date: 4/24/2013 **PQL** 

SeqNo: 289852 SPK value SPK Ref Val %REC LowLimit

HighLimit

**RPDLimit** 

Qual

Conductivity

3300 0.010

Result

%RPD 0.708

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

Reporting Detection Limit

В Analyte detected in the associated Method Blank

 $\mathbf{H}$ Holding times for preparation or analysis exceeded

Spike Recovery outside accepted recovery limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

Page 15 of 18

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID 1304981-002Bdup

SampType: dup

TestCode: SM4500-H+B: pH

Client ID: **Effluent** 

Batch ID: R10173 Analysis Date: 4/24/2013 RunNo: 10173

SeqNo: 289860

Units: pH units

HighLimit

%RPD **RPDLimit**  Qual

Analyte

pΗ

Prep Date:

Result PQL 7.38

SPK value SPK Ref Val %REC LowLimit

1.68

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range E

Analyte detected below quantitation limits I.

Sample pH greater than 2 P

Reporting Detection Limit

В Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded 11

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits Spike Recovery outside accepted recovery limits S

Page 16 of 18

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID mb-1

SampType: mblk

TestCode: SM2320B: Alkalinity

Client ID: PBW

Batch ID: R10173

RunNo: 10173

Prep Date:

Analysis Date: 4/24/2013

Analyte

SeqNo: 289837 SPK value SPK Ref Val %REC

Units: mg/L CaCO3

Total Alkalinity (as CaCO3)

LCSW

ND

**HighLimit** 

%RPD

Qual

Sample ID Ics-1

Result

SampType: Ics

20

20

RunNo: 10173

TestCode: SM2320B: Alkalinity

Client ID:

Batch ID: R10173

Prep Date:

Analysis Date: 4/24/2013

SeqNo: 289838

Units: mg/L CaCO3

Analyte

**PQL** 

SPK value SPK Ref Val 80.00

%REC 99.7

HighLimit

%RPD

**RPDLimit** 

**RPDLimit** 

Qual

Total Alkalinity (as CaCO3)

80

90

110

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- j Analyte detected below quantitation limits
- P Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н

Spike Recovery outside accepted recovery limits

ND Not Detected at the Reporting Limit

S

R RPD outside accepted recovery limits Page 17 of 18

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1304981

14-May-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** 

Sample ID MB-7202

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID:

**PBW** 

Batch ID: 7202

RunNo: 10211

%REC

**HighLimit** 

Prep Date: Analyte

4/29/2013

Analysis Date: 4/30/2013

SeqNo: 291255

LowLimit

Units: mg/L

**RPDLImit** Qual

Total Dissolved Solids

ND

Result

20.0 SampType: LCS

PQL

20.0

PQL

TestCode: SM2540C MOD: Total Dissolved Solids

%RPD

%RPD

Client ID: Prep Date:

Analyte

LCSW

Sample ID LCS-7202 4/29/2013

Batch ID: 7202 Analysis Date: 4/30/2013

RunNo: 10211 SeqNo: 291256

Units: mg/L

**RPDLimit** 

Qual

Total Dissolved Solids

Result 1020 SPK value SPK Ref Val 1000

SPK value SPK Ref Val

%REC LowLimit 102

80

**HighLimit** 

120

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits 1

P Sample pH greater than 2

Reporting Detection Limit RL

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded H

ND Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits Spike Recovery outside accepted recovery limits S

Page 18 of 18



Hall Environmental Analysis Laboratory 4901 Hawkius NE Albuquerque, NA 87105

TEL: 503-345-3975 FAX: 503-345-4107-Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Southw	Work Order Number:	1304981	1		RcptNo:	1
Received by/date:	nella da					
Logged By: Lindsay Mangin	4/24/2013 9:54:00 AM			7-4/160		
Completed By: Lindsay Mangin	4/24/2013 2:35:10 PM			A HARO		
Reviewed By: M	1/24/13			000		
Chain of Custody	No- 114					
Custody seals intact on sample bottles?		Yes		No	Not Present ✔	
2. Is Chain of Custody complete?		Yes V		No	Not Present	
3. How was the sample delivered?		UPS				
Log In						
Was an attempt made to cool the samples?		Yes .	,	No	NA	
To available the cool the samples?		168		140	195	
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 V	,	No !		
7. Sufficient sample volume for indicated test(s	)?	Yes ¥	1	No		
8, Are samples (except VOA and ONG) properl		Yes V	,	No		
9. Was preservative added to bottles?		Yes	i	No M	NA NA	
10.VOA vials have zero headspace?		Yes V	8	No	No VOA Vials	
11. Were any sample containers received broke	n?	Yes		No 🗸		
					# of preserved bottles checked	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes V	<i>i</i>	No	for pH:	or >12 unless no
13. Are matrices correctly identified on Chain of	Custody?	Yes V	e 52	No	Adjusted?	7 - 12 diliga 110
14, is it clear what analyses were requested?		Yes V		No		
15. Were all holding times able to be met?		Yes V	10	No i	Checked by:	
(If no, notify customer for authorization.)						
Special Handling (if applicable)						
16, Was client notified of all discrepancies with t	his order?	Yes		No	NA ✔	
Person Notified:	Date:					
By Whom:	Via:	eMail	Р	hone Fax	In Person	
Regarding:				1 100		
Client Instructions:						
17. Additional remarks:						
18. Cooler Information						
	nal Intact   Seal No   S	Seal Date		Signed By		

	4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	() () () () () () () () () () () () () (	M \ OR (SMIS)	4 TPH 4 TPH 5 O V E 5 O V E 5 O V E 6 O V E 7 O V E 7 O V E 7 O V E 7 O V E 8 O V E 8 O V E 9 O V E	381 3 (Gl 3 (Gl 4 (G	Preservative Type Type TYPE BLEX + M BLEX + M BLEX + M TPH 8015 TP	Varies - POI	Washib 27 -CCOZ	X				holts 4/3/13/4017 Plenge Forners results to Date Time agree Henr. com
Stody Record Tum	J NM 87413 Project #.	Project Manager:	D Level 4 (Full Validation) A Shile + Age.	Cother Other	Samplentence	Matrix Sample Request ID Type and #	A TAPIUS + 6 Various	Aa Effluent	to Trip Blank				Relinquished by: Relinquished by: Received by: Received by: Received by:
Client: Wes	Rloom Cald NM	Phone #: email or Fax#;	QA/QC Package: ☐ Standard	Accreditation DI NELAP	□ EDD (Type)	Date Time	4/23/15/15/13	4/23/18 1529	4/13/17 0800				Dete: Time:  \$\frac{1}{125/13} \left  617  Dete: Time:  \$\frac{1}{123/13} \left  1740

### VOCs 8260 General Chemistry:

pН

EC

TDS

alkalinity

hardness

anions

bromide

chloride

sulfate

fluoride

nitrate/nitrite

phosporus

cations

calcium

iron

magnesium

manganese

potassium

sodium



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuguerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

July 22, 2013

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413 TEL: (970) 946-1093

FAX

RE: GBR Quarterly Sampling

OrderNo.: 1307488

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/11/2013 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

### **Analytical Report** Lab Order 1307488

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/22/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Influent

Project: **GBR** Quarterly Sampling Collection Date: 7/10/2013 9:30:00 AM

Lab ID: 1307488-001 Matrix: AQUEOUS

Received Date: 7/11/2013 9:45:00 AM

Analyses	Result	RL	Qual U	nits	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst	JRR
Fluoride	0.54	0.10	) г	ng/L	1	7/15/2013 9:33:23 PM	R11962
Chloride	78	10	) г	ng/L	20	7/12/2013 3:32:25 AM	R11891
Nitrogen, Nitrite (As N)	ND	0.10	) г	ng/L	1	7/12/2013 3:20:00 AM	R11891
Bromide	0.35	0.10	) г	ng/L	1	7/12/2013 3 20:00 AM	R11891
Nitrogen, Nitrate (As N)	1.3	0.10	) г	ng/L	1	7/12/2013 3:20:00 AM	R11891
Phosphorus, Orthophosphate (As P)	ND	0.50	) In	ng/L	1	7/12/2013 3:20:00 AM	R11891
Sulfate	1400	25	:	ng/L	50	7/15/2013 9:45:47 PM	R11962
EPA METHOD 200.7: METALS						Analyst	JLF
Calcium	330	5.0	) п	ng/L	5	7/12/2013 4:05:52 PM	R11905
Iron	0.13	0.020	) п	ng/L	1	7/12/2013 4:03:05 PM	R11905
Magnesium	31	1.0		ng/L	1	7/12/2013 4:03:05 PM	R11905
Manganese	0.38	0.0020	· • n	ng/L	1	7/12/2013 4:03:05 PM	R11905
Potassium	3.9	1.0	) п	ng/L	1	7/12/2013 4:03:05 PM	R11905
Sodium	440	5.0	ı n	ng/L	5	7/17/2013 12:10:53 PM	R12024
SM2340B: HARDNESS						Analyst	JLF
Hardness (As CaCO3)	960	6.6	n	ng/L	1	7/12/2013 12:55:00 PM	R11905
EPA METHOD 8260B: VOLATILES						Analyst	cws
Benzene	ND	1.0	) µ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Toluene	ND	1.0	i p	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Ethylbenzene	ND	1.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Methyl tert-butyl ether (MTBE)	ND	1.0	ıμ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
1,2,4-Trimethylbenzene	ND	1.0	) µ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
1,3,5-Trimethylbenzene	ND	1.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
1,2-Dichloroethane (EDC)	ND	1.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
1,2-Dibromoethane (EDB)	ND	1.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Naphthalene	ND	2.0	) µ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
1-Methylnaphthalene	ND	4.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
2-Methylnaphthalene	ND	4.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Acetone	ND	10	ļ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Bromobenzene	ND	1.0	ļ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Bromodichloromethane	ND	1.0	ļ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Bromoform	ND	1.0	ļ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Bromomethane	ND	3.0	ļ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
2-Butanone	ND	10	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Carbon disulfide	ND	10	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Carbon Tetrachloride	ND	1.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Chlorobenzene	ND	1.0	į į	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Chloroethane	ND	2.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924
Chloroform	ND	1.0	μ	ıg/L	1	7/12/2013 5:56:33 PM	R11924

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- RSD is greater than RSDlimit
- RPD outside accepted recovery limits

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
  - Not Detected at the Reporting Limit Page 1 of 17 Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

# Analytical Report Lab Order 1307488

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/22/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Influent

**Project:** GBR Quarterly Sampling

Collection Date: 7/10/2013 9:30:00 AM

Lab ID: 1307488-001

Matrix: AQUEOUS

Received Date: 7/11/2013 9:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	: CWS
Chloromethane	ND	3.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
2-Chlorotoluene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
4-Chlorotoluene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
cis-1,2-DCE	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
Dibromochloromethane	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
Dibromomethane	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
1,2-Dichlorobenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
1,3-Dichlorobenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
1,4-Dichlorobenzene	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
Dichlorodifluoromethane	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R11924
1,1-Dichloroethane	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
1,1-Dichloroethene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R11924
1,2-Dichloropropane	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R1192
1,3-Dichloropropane	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
2,2-Dichloropropane	ND	2.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
1.1-Dichloropropene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
Hexachlorobutadiene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
2-Hexanone	ND	10	μg/L	1	7/12/2013 5:56:33 PM	R1192
Isopropylbenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
4-Isopropyltoluene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
4-Methyl-2-pentanone	ND	10	μg/L	1	7/12/2013 5:56:33 PM	R1192
Methylene Chloride	ND	3.0	μg/L	1	7/12/2013 5 56 33 PM	R1192
n-Butylbenzene	ND	3.0	μg/L	1	7/12/2013 5 56 33 PM	R1192
n-Propylbenzene	ND	1.0	μg/L	1	7/12/2013 5.56.33 PM	R1192
sec-Butylbenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
Styrene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
tert-Butylbenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
trans-1,2-DCE	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
1,1,1-Trichloroethane	ND	1.0	µg/L	1	7/12/2013 5:56:33 PM	R1192
1.1,2-Trichloroethane	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
Trichloroethene (TCE)	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192
Trichtorofluoromethane	ND	1.0	μg/L	1	7/12/2013 5:56:33 PM	R1192

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Page 2 of 17
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1307488

Date Reported: 7/22/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Quarterly Sampling

Lab ID: 1307488-001

Client Sample ID: Influent

Collection Date: 7/10/2013 9:30:00 AM

Received Date: 7/11/2013 9:45:00 AM

Analyses	Resul	t	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VO	LATILES						Analyst:	cws
1,2,3-Trichloropropane	N	D	2.0		μg/L	1	7/12/2013 5:56:33 PM	R11924
Vinyl chloride	N	D	1.0		µg/L	1	7/12/2013 5:56:33 PM	R11924
Xylenes, Total	_ N	D	1.5		⊩µg/L	1	7/12/2013 5:56:33 PM	R11924
Surr: 1,2-Dichloroethane-d	4 1	11	70-130		%REC	1	7/12/2013 5:56:33 PM	R11924
Surr: 4-Bromofluorobenzer	ne 98	4	70-130		%REC	1	7/12/2013 5:56:33 PM	R11924
Surr: Dibromofluorometha	ne 10	)5	70-130		%REC	1	7/12/2013 5:56:33 PM	R11924
Surr: Toluene-d8	99	.8	70-130		%REC	1	7/12/2013 5:56:33 PM	R11924
SM2510B: SPECIFIC CON	DUCTANCE						Analyst:	JML
Conductivity	350	00	0.010		µmhos/cm	1	7/12/2013 5:02:14 PM	R11927
SM4500-H+B: PH							Analyst:	JML
pH	7.3	31	1.68	Н	pH units	1	7/12/2013 5:02:14 PM	R11927
SM2320B: ALKALINITY							Analyst:	JML
Bicarbonate (As CaCO3)	34	10	20		mg/L CaCO3	1	7/12/2013 5:02:14 PM	R11927
Carbonate (As CaCO3)	N	D	2.0		mg/L CaCO3	1	7/12/2013 5:02:14 PM	R11927
Total Alkalinity (as CaCO3)	34	10	20		mg/L CaCO3	1	7/12/2013 5:02:14 PM	R11927
SM2540C MOD: TOTAL DI	SSOLVED SOLIDS						Analyst:	KS
Total Dissolved Solids	275	50	20.0	*	mg/L	1	7/16/2013 9:46:00 AM	8364

Matrix: AQUEOUS

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit p
  - P Sample pH greater than 2 for VOA and TOC only.
  - RL Reporting Detection Limit

Lab Order 1307488

Date Reported: 7/22/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

**GBR Quarterly Sampling** 

Lab ID: 1307488-002 Client Sample ID: Effluent

Collection Date: 7/10/2013 9:45:00 AM

Received Date: 7/11/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS	<del></del>					Analyst:	JRR
Fluoride	0.56	0.10		mg/L	1	7/15/2013 9 58:12 PM	R11962
Chloride	78	10		mg/L	20	7/12/2013 3:57:15 AM	R11891
Nitrogen, Nitrite (As N)	0.13	0.10		mg/L	1	7/12/2013 3:44:50 AM	R11891
Bromide	0.33	0.10		mg/L	1	7/12/2013 3:44:50 AM	R11891
Nitrogen, Nitrate (As N)	0.90	0.10		mg/L	1	7/12/2013 3:44:50 AM	R11891
Phosphorus, Orthophosphate (As P)	ND	0,50		mg/L	1	7/12/2013 3:44:50 AM	R11891
Sulfate	1400	25	*	mg/L	50	7/15/2013 10:10:37 PM	R11962
EPA METHOD 200.7: METALS						Analyst:	JLF
Calcium	360	5.0	•	mg/L	5	7/16/2013 3:34:46 PM	R11972
Iron	ND	0.020	)	mg/L	1	7/16/2013 3:31:58 PM	R11972
Magnesium	31	1.0	)	mg/L	1	7/16/2013 3:31:58 PM	R11972
Manganese	0.45	0.0020		mg/L	1	7/16/2013 3:31:58 PM	R11972
Potassium	3.3	1.0	١	mg/L	1	7/16/2013 3:31:58 PM	R11972
Sodium	440	10	)	mg/L	10	7/17/2013 12:13:20 PM	R12024
SM2340B: HARDNESS						Analyst	JLF
Hardness (As CaCO3)	1000	6.6	i	mg/L	1	7/16/2013 10:58:00 AM	R11972
EPA METHOD 8260B: VOLATILES						Analyst	cws
Benzene	ND	1,0	1	μg/L	1	7/12/2013 7:22:52 PM	R1192
Toluene	ND	1.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Ethylbenzene	ND	1,0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Methyl tert-butyl ether (MTBE)	ND	1.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
1,2,4-Trimethylbenzene	ND	1.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
1,3,5-Trimethylbenzene	ND	1.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
1,2-Dichloroethane (EDC)	ND	1.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
1,2-Dibromoethane (EDB)	ND	1,0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Naphthalene	ND	2,0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
1-Methylnaphthalene	ND	4.0	)	µg/L	1	7/12/2013 7:22:52 PM	R1192
2-Methylnaphthalene	ND	4.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Acetone	ND	10	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Bromobenzene	ND	1,0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Bromodichloromethane	ND	1.0	)	μ <b>g/L</b>	1	7/12/2013 7:22:52 PM	R1192
Bromoform	ND	1.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Bromomethane	ND	3.0	)	µg/L	1	7/12/2013 7 22 52 PM	R1192
2-Butanone	ND	10	)	μg/L	1	7/12/2013 7 22 52 PM	R1192
Carbon disulfide	ND	10	)	µg/L	1	7/12/2013 7 22 52 PM	R1192
Carbon Tetrachloride	ND	1,0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Chlorobenzene	ND	1.0	)	µg/L	1	7/12/2013 7:22:52 PM	R1192
Chloroethane	ND	2.0	)	μg/L	1	7/12/2013 7:22:52 PM	R1192
Chloroform	ND	1.0	)	µg/L	1	7/12/2013 7:22:52 PM	R1192

Matrix: AQUEOUS

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit O
- RPD outside accepted recovery limits

- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- Not Detected at the Reporting Limit Page 4 of 17 Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

Lab Order 1307488

Date Reported: 7/22/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Effluent

Matrix: AQUEOUS

Project: **GBR Quarterly Sampling** 1307488-002

Lab ID:

Collection Date: 7/10/2013 9:45:00 AM Received Date: 7/11/2013 9:45:00 AM

Analyses	ALESSAN T. DA	Result	RL Q	ıal Units	DF	Date Analyzed	Batch
EPA METHOD	8260B: VOLATILES				760	Analyst	: cws
Chloromethane		ND	3.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
2-Chlorotoluene	10.00	ND	1.0	μց/∟	1	7/12/2013 7:22:52 PM	R11924
4-Chlorotoluene		ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
cis-1,2-DCE		ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
cis-1,3-Dichloro	propene	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,2-Dibromo-3-c	chloropropane	ND	2.0	∥µg/L	1	7/12/2013 7:22:52 PM	R11924
Dibromochloron	nethane	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
Dibromomethan	e	NĐ	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,2-Dichloroben	zene	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,3-Dichloroben	zene	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,4-Dichloroben	zene	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
Dichlorodifluoro	methane	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,1-Dichloroetha	ane	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,1-Dichloroethe	ene	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
1,2-Dichloroprop	рале	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
1,3-Dichloroprop	pane	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
2,2-Dichloroprop	pane	ND	2.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
1,1-Dichloroprop	pene	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
Hexachlorobuta	diene	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
2-Hexanone		ND	10	μg/L	1	7/12/2013 7:22 52 PM	R11924
Isopropylbenzer	ne	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
4-Isopropyltolue	ne	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
4-Methyl-2-pent	anone	ND	10	μ <b>g</b> /L	1	7/12/2013 7:22:52 PM	R11924
Methylene Chlor	ride	ND	3.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
n-Butylbenzene		ND	3.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
n-Propylbenzen	е	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
sec-Butylbenzer	ne	ND	1.0	μg/L	1	7/12/2013 7 22 52 PM	R11924
Styrene		ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
tert-Butylbenzer	ne	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,1,1,2-Tetrachl	oroethane	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,1,2,2-Tetrachl	oroethane	ND	2.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
Tetrachloroethe	ne (PCE)	ND	1.0	μg/L	1	7/12/2013 7 22 52 PM	R11924
trans-1,2-DCE		ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
trans-1,3-Dichlo	ropropene	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,2,3-Trichlorob	enzene	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,2,4-Trichlorob	enzene	ND	1.0	μg/L	1	7/12/2013 7:22 52 PM	R11924
1,1,1-Trichloroe	thane	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
1,1,2-Trichloroe	thane	ND	1.0	µg/L	1	7/12/2013 7:22:52 PM	R11924
Trichloroethene	(TCE)	ND	1.0	µg/L	1	7/12/2013 7:22:52 PM	R11924
Trichlorofluorom	rethane	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924

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

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- RPD outside accepted recovery limits

- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit

Page 5 of 17 Sample pH greater than 2 for VOA and TOC only.

Reporting Detection Limit

Lab Order 1307488

Date Reported: 7/22/2013

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Effluent

Project: **GBR Quarterly Sampling** 

CLIENT: Western Refining Southwest, Inc.

Collection Date: 7/10/2013 9:45:00 AM

Lab ID:

1307488-002

Matrix: AQUEOUS

Received Date: 7/11/2013 9:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	: CWS
1,2,3-Trichloropropane	ND	2.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
Vinyl chloride	ND	1.0	μg/L	1	7/12/2013 7:22:52 PM	R11924
Xylenes, Total	ND	1.5	μg/L	1	7/12/2013 7:22:52 PM	R11924
Surr: 1,2-Dichloroethane-d4	107	70-130	%REC	1	7/12/2013 7:22:52 PM	R11924
Surr: 4-Bromofluorobenzene	104	70-130	%REC	1	7/12/2013 7:22:52 PM	R11924
Surr: Dibromofluoromethane	104	70-130	%REC	1	7/12/2013 7:22:52 PM	R11924
Surr: Toluene-d8	100	70-130	%REC	1	7/12/2013 7:22:52 PM	R11924
SM2510B: SPECIFIC CONDUCTANCE					Analyst	: JML
Conductivity	3500	0.010	µmhos/cm	1	7/12/2013 5:18:03 PM	R11927
SM4500-H+B: PH					Analyst	: JML
pH	7.28	1.68 I	H pH units	1	7/12/2013 5:18:03 PM	R11927
SM2320B: ALKALINITY					Analyst	: JML
Bicarbonate (As CaCO3)	340	20	mg/L CaCO3	1	7/12/2013 5:18:03 PM	R11927
Carbonate (As CaCO3)	ND	2.0	mg/L CaCO3	1	7/12/2013 5:18:03 PM	R11927
Total Alkalinity (as CaCO3)	340	20	mg/L CaCO3	1	7/12/2013 5:18:03 PM	R11927
SM2540C MOD: TOTAL DISSOLVED S	SOLIDS				Analysi	: KS
Total Dissolved Solids	2760	20.0	* mg/L	1	7/16/2013 9:46:00 AM	8364

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

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSD limit
- RPD outside accepted recovery limits

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

- Not Detected at the Reporting Limit Page 6 of 17 Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

Lab Order 1307488

Date Reported: 7/22/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: **GBR** Quarterly Sampling Collection Date:

Lab ID: 1307488-003 Matrix: TRIP BLANK

Received Date: 7/11/2013 9:45:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				-	Analyst	: CWS
Benzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Toluene	ND	= 1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Ethylbenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Methyl tert-butyl ether (MT8E)	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2-Dichloroethane (EDC)	ND	1.0	⊩μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Naphthalene	ND	2.0	∥µg/L	1	7/12/2013 7:51:39 PM	R11924
1-Methylnaphthalene	ND	4.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
2-Methylnaphthalene	ND	4.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Acetone	ND	10	μg/L	1	7/12/2013 7:51:39 PM	R11924
Bromobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Bromodichloromethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Bromoform	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Bromomethane	ND	3.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
2-Butanone	ND	10	μg/L	1	7/12/2013 7:51:39 PM	R11924
Carbon disulfide	ND	10	μg/L	1	7/12/2013 7:51:39 PM	R11924
Carbon Tetrachloride	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Chlorobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Chloroethane	ND	2.0	∥µg/L	1	7/12/2013 7:51:39 PM	R11924
Chloroform	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Chloromethane	ND	3.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
2-Chlorotoluene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
4-Chlorotoluene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
cis-1,2-DCE	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Dibromochloromethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Dibromomethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2-Dichtorobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,3-Dichlorobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,4-Dichlorobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Dichlorodifluoromethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,1-Dichloroethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,1-Dichloroethene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2-Dichloropropane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,3-Dichloropropane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
2,2-Dichloropropane	ND	2.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,1-Dichloropropene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924

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

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits

- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit

Not Detected at the Reporting Limit Page 7 of 17 Sample pH greater than 2 for VOA and TOC only.

Reporting Detection Limit

Lab Order 1307488

Date Reported: 7/22/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

**GBR** Quarterly Sampling Project:

**Collection Date:** 

1307488-003 Lab ID:

Matrix: TRIP BLANK

Received Date: 7/11/2013 9:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES			<u></u>		Analyst	: cws
Hexachlorobutadiene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
2-Hexanone	ND	10	µg/L	1	7/12/2013 7:51:39 PM	R11924
Isopropylbenzene	ND	1.0	µg/L	1	7/12/2013 7:51:39 PM	R11924
4-Isopropyltoluene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
4-Methyl-2-pentanone	ND	10	μg/L	1	7/12/2013 7:51:39 PM	R11924
Methylene Chloride	ND	3.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
n-Butylbenzene	ND	3.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
n-Propylbenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
sec-Butylbenzene	ND	1.0	µg/L	1	7/12/2013 7:51:39 PM	R11924
Styrene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
tert-Butylbenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
trans-1,2-DCE	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	7/12/2013 7:51:39 PM	R11924
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,1,1-Trichloroethane	NĐ	1.0	μg/L	1	7/12/2013 7:51:39 PM	R1192
1,1,2-Trichloroethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Trichloroethene (TCE)	ND	1.0	µg/L	1	7/12/2013 7:51:39 PM	R11924
Trichlorofluoromethane	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
1,2,3-Trichloropropane	ND	2.0	μg/L	1	7/12/2013 7:51:39 PM	R11924
Vinyl chloride	ND	1.0	μg/L	1	7/12/2013 7:51:39 PM	R1192
Xylenes, Total	ND	1.5	μg/L	1	7/12/2013 7:51:39 PM	R11924
Surr: 1,2-Dichloroethane-d4	107	70-130	%REC	1	7/12/2013 7:51:39 PM	R1192
Surr: 4-Bromofluorobenzene	100	70-130	%REC	1	7/12/2013 7:51:39 PM	R1192
Surr: Dibromofluoromethane	104	70-130	%REC	1	7/12/2013 7:51:39 PM	R11924
Surr: Toluene-d8	97.0	70-130	%REC	1	7/12/2013 7:51:39 PM	R11924

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

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSD limit
- RPD outside accepted recovery limits

- Analyte detected in the associated Method Blank
- $\mathbf{H}$ Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

- Not Detected at the Reporting Limit Page 8 of 17 Sample pH greater than 2 for VOA and TOC only. P
- Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:	
Project	

Western Refining Southwest, Inc.

Project: GBR Quarterly Sampling

Sample ID LCS	Samp	Type: LC	S	Te	stCode: El	PA Method	200.7: Metals			
Client ID: LCSW	Bato	h ID: R1	1905		RunNo: 1	1905				
Prep Date:	Analysis	Date: 7/	12/2013		SeqNo: 3	38406	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	96.1	85	115			
ron	0.51	0.020	0.5000	- 0	101	85	115			
/lagnesium	48	1.0	50.00	0	96.7	85	115			
Manganese	0.50	0.0020	0.5000	0	99.1	85	115			
Potassium	47	1.0	50.00	0	94.5	85	115			

Samble ID MR	Samp	Type: ME	SLK	ies	(Code: E	PA Method	200.7: Metals			
Client ID: PBW	Batc	h ID: R1	1905	F	RunNo: 1	1905				
Prep Date:	Analysis (	Date: 7/	12/2013	\$	SeqNo: 3	38407	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	11	m 25			-11			
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								

Sample ID MB	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	200.7: Metals			
Client ID: PBW	Bato	h ID: R1	1972	F	RunNo: 1	1972				
Prep Date:	Analysis I	Date: 7/	16/2013	5	SeqNo: 3	40213	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	<b>RPDLimit</b>	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								

Sample ID LCS	Samp	Type: LC	S	Tes	tCode: El	PA Method	200.7: Metals	3		
Client ID: LCSW	Bato	h ID: R1	1972	F	RunNo: 1	1972				
Prep Date:	Analysis	Date: 7/	16/2013	5	SeqNo: 3	40214	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.3	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Magnesium	49	1.0	50.00	0	98.9	85	115			
Manganese	0.52	0.0020	0.5000	0	103	85	115			
Potassium	48	1.0	50.00	0	95.5	85	115			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Page 9 of 17

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

**Client:** 

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID MB	SampT	уре: МЕ	BLK	Tes	Code: El	PA Method	200.7: Metals	\$			
Client ID: PBW	Batch	ID: R1	2024	R	tunNo: 1	2024					
Prep Date:	Analysis D	ate: 7/	17/2013	S	ieqNo: 3	41697	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sodium	ND	1.0		-			•				

Sample ID LCS	SampT	ype: LC	S	Tes	(Code: El	PA Method	200.7: Metals	,		
Client ID: LCSW	Batch	ID: R1	2024	F	RunNo: 1	2024				
Prep Date:	Analysis D	ate: 7/	17/2013	S	ieqNo: 3	41698	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	48	1.0	50.00	0	95.7	85	115			

Sample ID MB2	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	200.7: Metals	5		
Client ID: PBW	Batch	ID: R1	2024	F	RunNo: 1	2024				
Prep Date:	Analysis D	ate: 7/	17/2013	5	SeqNo: 3	41750	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Sample ID LCS2	SampT	ype: LC	S	Tes	Code: El	PA Method	200.7: Metals	5	·	
Client ID: LCSW	Batch	ID: R1	2024	R	lunNo: 1	2024				
Prep Date:	Analysis D	ate: 7/	17/2013	S	eqNo: 3	41751	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	49	1,0	50,00	0	97.7	85	115	•		•

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Page 10 of 17

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID MB	SampTy	ype: ME	3LK	Tes	tCode: E	PA Method	300.0: Anion:	s		
Client ID: PBW	Batch	ID: R1	1891	E F	RunNo: 1	11891				
Prep Date:	Analysis Da	ate: 7/	11/2013		SeqNo: 3	337962	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								

Samble ID TC2	Sampi	ype: LC	5	les	(Code: El	PA Method	300.0: Anions	5		
Client ID: LCSW	Batch	ı ID: R1	1891	F	RunNo: 1	1891				
Prep Date:	Analysis D	ate: 7/	11/2013	8	SeqNo: 3	37963	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	95.8	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.6	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.6	90	110			

Sample ID MB	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	300.0: Anions	\$		
Client ID: PBW	Batch	ID: <b>R1</b>	1891	F	RunNo: 1	1891				
Prep Date:	Analysis D	ate: 7/	12/2013	8	SeqNo: 3	38016	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	SampT	ype: LC	s	Tes	lCode: El	PA Method	300.0: Anion:	5		
Client ID: LCSW	Batch	1D: <b>R1</b>	1891	F	lunNo: 1	1891				
Prep Date:	Analysis D	)ate: 7/	12/2013	8	ieqNo: 3	38017	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	95.4	90	110		-	
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.7	90	110			
Bromide	2.5	0.10	2.500	0	99.8	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.2	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.9	90	110			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Quarterly Sampling** 

Sample ID MB	SampTy	pe: MBI	LK	Test	Code: El	PA Method	300.0: Anion	5		
Client ID: PBW	Batch	ID: R11	962	R	unNo: 1	1962				
Prep Date:	Analysis Da	ale: 7/1	5/2013	S	eqNo: 3	39981	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10						•		
Sulfate	ND	0.50								

Sample ID LCS-b	SampT	ype: LC	S	Tes	tCode: El	PA Method	300.0: Anion:	5		
Client ID: LCSW	Batch	ID: R1	1962	R	lunNo: 1	1962				
Prep Date:	Analysis D	ate: 7/	15/2013	S	SeqNo: 3	39983	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.45	0.10	0.5000	0	90.4	90	110			
Sulfate	9,3	0.50	10.00	0	93.5	90	110			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Page 12 of 17

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID 5ml rb	SampT	ype: MBLK	Te	stCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: R11924		RunNo: 1	1924				
Prep Date:	Analysis D	rate: 7/12/2013		SeqNo: 3	38811	Units: µg/L			
Analyte	Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0							
Toluene	ND	1.0							
Ethylbenzene	ND	1.0							
Methyl tert-butyl ether (MTBE)	ND	1.0							
1,2,4-Trimethylbenzene	ND	1.0							
1,3,5-Trimethylbenzene	ND	1.0							
1,2-Dichloroethane (EDC)	ND	1.0							
1,2-Dibromoethane (EDB)	ND	1.0							
Naphthalene	ND	2.0							
1-Methylnaphthalene	ND	4.0							
2-Methylnaphthalene	ND	4.0							
Acetone	ND	10							
Bromobenzene	ND	1.0							
Bromodichloromethane	ND	1.0							
Bromoform	ND	1.0							
Bromomethane	ND	3.0							
2-Butanone	ND	10							
Carbon disulfide	ND	10							
Carbon Tetrachloride	ND	1.0							
Chlorobenzene	ND	1.0							
Chloroethane	ND	2.0							
Chloroform	ND	1.0							
Chloromethane	ND	3.0							
2-Chlorotoluene	ND	1.0							
4-Chlorotoluene	ND	1.0							
dis-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							
I,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	NĎ	1.0							
2,2-Dichloropropane	ND	2.0							
1,1-Dichloropropene	ND	1.0							

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Quarterly Sampling** 

Sample ID 5m1 rb	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batcl	ID: R1	1924	F	RunNo: 1	1924				
Prep Date:	Analysis D	)ate: 7/	12/2013	5	SeqNo: 3	38811	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
lsopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr. 4-Bromofluorobenzene	10		10.00		103	70				
Surr Dibromofuoromethane	11		10.00		107	70				
Surr: Toluene-d8	9.6		10.00		95.9	70				

Sample ID 100ng lcs	SampT	ype: LC	S	TestCode: EPA Method 8260B: VOLATILES								
Client ID: LCSW	Batch	ID: R1	1924	R	RunNo: 1	1924						
Prep Date:	Analysis D	ate: 7/	12/2013	S	eqNo: 3	38814	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	19	1.0	20.00	0	95.5	70	130					
Toluene	18	1.0	20.00	0	90.6	80	120					
Chlorobenzene	17	1.0	20.00	0	85.3	70	130					
1,1-Dichloroethene	17	1.0	20.00	0	84.4	85.8	133			S		
Trichloroethene (TCE)	17	1.0	20.00	0	86.1	86.1 70 130						

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Quarterly Sampling** 

Sample ID 100ng Ics	SampT	ype: LC	s	Tes	(Code: El	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batch	ID: R1	1924	F	RunNo: 1	1924				
Prep Date:	Analysis D	ate: 7/	12/2013		SeqNo: 3	38814	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr. 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID 1307488-001a m	s SampT	ype: MS	3	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: Influent	Batch	1D: <b>R1</b>	1924	F	RunNo: 1	1924				
Prep Date:	Analysis D	ate: 7/	12/2013	5	SeqNo: 3	38821	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.8	67.9	137			
Toluene	19	1.0	20.00	0	94.0	77	127			
Chlorobenzene	17	1.0	20.00	0	87.2	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	84.7	66.5	131			
Trichloroethene (TCE)	18	1.0	20.00	0	88.7	66.3	134			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.8		10.00		98.4	70	130			

Sample ID 1307488-001a m	nsd SampT	ype: MS	SD	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: Influent	Batch	ID: R1	1924	F	RunNo: 1	1924				
Prep Date:	Analysis D	ate: 7/	12/2013	8	SeqNo: 3	38822	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.1	67.9	137	6.91	20	
Toluene	19	1.0	20.00	0	92.6	77	127	1.58	20	
Chlorobenzene	17	1.0	20.00	0	84.4	70	130	3.28	20	
1,1-Dichloroethene	16	1.0	20.00	0	82.3	66.5	131	2,88	20	
Trichloroethene (TCE)	17	1.0	20.00	0	83.3	66.3	134	6.28	20	
Surr. 1,2-Dichloroethane-d4	11		10.00		108	70	130	0	0	
Surr. 4-Bromofluorobenzene	9.6		10.00		95.6	70	130	0	0	
Surr. Dibromofluoromethane	11		10.00		106	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		98.4	70	130	0	0	

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Page 15 of 17

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

**Client:** 

Western Refining Southwest, Inc.

Project:

**GBR Quarterly Sampling** 

Jan	ibie in	HID-I

SampType: mblk

TestCode: SM2320B: Alkalinity

Client ID: PBW

Batch ID: R11927

RunNo: 11927

Prep Date:

Analysis Date: 7/12/2013

SeqNo: 339134

Units: mg/L CaCO3

Analyte

Result ND 20 SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD **RPDLimit**  Qual

Total Alkalinity (as CaCO3)

SampType: Ics

TestCode: SM2320B: Alkalinity

Sample ID Ics-1 Client ID: LCSW

Batch ID: R11927

RunNo: 11927

Prep Date:

Analysis Date: 7/12/2013

SeqNo: 339135

100

Units: mg/L CaCO3

Analyte Total Alkalinity (as CaCO3) Result PQL

80

SPK value SPK Ref Val

%REC LowLimit **HighLimit** %RPD 110

**RPDLimit** Qual

Sample ID mb-2

SampType: mblk

TestCode: SM2320B: Alkalinity

90

Client ID: Prep Date:

PBW

Batch ID: R11927

20

RunNo: 11927

Units: mg/L CaCO3

%RPD

Analyte

Result ND

Result

80

Analysis Date: 7/12/2013 SPK value SPK Ref Val %REC PQL

SeqNo: 339154

HighLimit

**RPDLimit** 

Qual

Total Alkalinity (as CaCO3)

Sample ID Ics-2

Client ID: LCSW

20

TestCode: SM2320B: Alkalinity

LowLimit

SampType: Ics

Batch ID: R11927

RunNo: 11927

Prep Date:

Analysis Date: 7/12/2013

PQL

20

SeqNo: 339155

Units: mg/L CaCO3

Analyte

80.00

SPK value SPK Ref Val %REC

0

LowLimit

%RPD

**RPDLimit** 

Qual

Total Alkalinity (as CaCO3)

80.00

99.7

110

90

HighLimit

### Qualifiers:

Value exceeds Maximum Contaminant Level.

Analyte detected below quantitation limits

- Value above quantitation range Ε
- RSD is greater than RSDlimit 0 RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- Sample pH greater than 2 for VOA and TOC only. Reporting Detection Limit RL

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1307488

22-Jul-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID MB-8364	SampT	ype: ME	BLK	Tesi	Code:	SM2540C MC	D: Total Dis	solved So	lids		
Client ID: PBW	Batch	ID: 83	64	R	lunNo:	11956					
Prep Date: 7/14/2013	Analysis D	ate: 7/	16/2013	S	eqNo:	339808	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0							2		

Sample ID LCS-8364	SampTy	pe: LC	s	Tes	Code: S	e: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch I	D: 836	64	F	lunNo: 1	11956								
Prep Date: 7/14/2013	Analysis Dat	le: 7/	16/2013	S	SeqNo: 339809 Units: mg/L									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Total Dissolved Solids	1020	20.0	1000	0	102	80	120							

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refir	ning Southw Work Orde	er Number: 13074	88		RcptNo: 1	
Received by/date:	7 07/1/1	3				
Logged By: Lindsay Mar	ngin 7/11/2013 9:	45:00 AM	On the	H		
Completed By: Lindsay Mar	ngin 7/11/2013 1	2:00:47 PM	0	HARD		
Reviewed By:	07/11/	13				
Chain of Custody	3.			-		
1. Custody seals intact on san	nple bottles?	Yes	□ N	• <b></b>	Not Present	
2. Is Chain of Custody comple	rte?	Yes	<b>☑</b> N	• 🗆	Not Present 🔲	
3. How was the sample delive	red?	Cllen	t.			
<u>Log In</u>						
4. Was an attempt made to c	ool the samples?	Yes	₩ N	lo 🗆	na 🗆	
5. Were all samples received	at a temperature of >0° C to	6.0°C Yes	<b>☑</b> No	<b>.</b> 🗆	NA 🗆	
6. Sample(s) in proper contain	ner(a)?	Yes	<b>✓</b>	lo 🗆		
7. Sufficient sample volume for	or indicated test(s)?	Yes	<b>☑</b> N	。 <b>□</b>	2	
8, Are samples (except VOA	and ONG) properly preserved:	? Yes	<b>☑</b> N	o 🗆		
9. Was preservative added to	bottles?	Yes	□ N	lo 🗹	na 🗆	
10.VOA vials have zero heads	space?	Yes	_	lo 🗆	No VOA Vials	
11. Were any sample containe	ers received broken?	Yes	L	<b>1</b> 0 🗹	# of preserved \	-
12.Does paperwork match bot	He labels?	Yes	<b>☑</b> N	to 🗆	bottles checked for pH:	
(Note discrepancies on cha				_		12 unless noted)
13. Are matrices correctly Iden	tifled on Chain of Custody?	Yes	_	lo 🗌	Adjusted?	Mr.
14. Is it clear what analyses w		Yes		io 🗌 io 🔲	Checked by:	2
15. Were all holding times able (If no, notify customer for a		Yes	<b>✓</b> N	ю ш	Jiloutou Dy.	
Special Handling (if app	dicable)					
16. Was client notified of all di		Yes		lo 🗆	NA 🗹	
Person Notified:		Date:				
By Whom:		Via: ☐ eM	ail Phone	☐ Fax	In Person	
Regarding:						
Client Instructions:						
17. Additional remarks:		25				
18. Cooler Information  Cooler No Temp °C  1 1.6	Good Yes	Seal No   Seal D	Date Signe	ad By		

	R Y	; !						- (	(N 10	\) :	elddu8 1iA		Н		+	+		+		
THE HATTONING THE	ANALYSIS LABORATORY		4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	BO)	S'*Od (SW	) H (0	\O5 (1.81 (1.40 (1.40 )\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	FBE od 4 od 5 oo on etals cides	BTEX + MT BTEX + MT TPH 8015E TPH (Meth PAH's (831 RCRA 8 M Anions (F, 8081 Pestic 8081 Pestic 8081 Pestic Anions (F,		X						Remarks: Please emoil results to	OALS AAGER HENVICON TO THE analytical report as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
J Time:	d □ Rush	١,	K Charlety Sampling	-			Haek		ACANIEL NELLINAMI	And the second second	Preservative Plear Type	Varies 2	\						1/9/0 1336	corodled aboratories This gerves
Tum-Around	Standard	Project Name:	1 GB	Project #:		Project Manager:	Ashlex		Sampier.	Sample	Container Type and #	0	0	C.Q					Received by:	on the contraction of the ra
Chain-of-Custody Record	Client: Kelly Rebinson	Western Refining	Mailing Address: /// CR 4990	Bloomfield, MM B7413		email or Fax#: Ashley Aged	j :ed	☐ Level 4 (Full Validation)	Coregination Other	O EDD (Type)	Date Time Matrix Sample Request ID	The list gas low Influent	Web 245		$\rightarrow$				3	7/(6/7) 1754 Min The Jalls if necessary, pemples submitted to Hell Environmental may be subco

## ----VOCs 8260 General Chemistry: — pH - EC ~TDS - alkalinity hardness anions -bromide \_ chloride sulfate fluoride -nitrate/nitrite nitrate/mine phosporus cations calcium iron iron - magnesium \_ manganese \_\_ potassium

sodium



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

October 25, 2013

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990

Bloomfield, NM 87413 TEL: (970) 946-1093 FAX (505) 632-3911

RE: GBR Quarterly Sampling OrderNo.: 1310301

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/5/2013 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 1310301

Date Reported: 10/25/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Influent

Project: **GBR** Quarterly Sampling Collection Date: 10/4/2013 11:40:00 AM

Lab ID: 1310301-001

Matrix: AQUEOUS

Received Date: 10/5/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst	: JRR
Fluoride	0.70	0.10		mg/L	1	10/8/2013 9:48:48 AM	R13948
Chloride	82	10		mg/L	20	10/8/2013 10:01:13 AM	R13948
Bromide	0.36	0.10		mg/L	1	10/8/2013 9:48:48 AM	R13948
Phosphorus, Orthophosphate (As P)	ND	10	Н	mg/L	20	10/8/2013 10:01:13 AM	R13948
Sulfate	1500	25	*	mg/L	50	10/10/2013 4:36:34 PM	R14005
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/9/2013 4:15:22 PM	R13985
EPA METHOD 200.7: METALS						Analyst	JLF
Calcium	310	5.0		mg/L	5	10/11/2013 1:12:10 PM	R14004
Iron	0.14	0.020		mg/L	1	10/11/2013 1:10:08 PM	R14004
Magnesium	30	1.0		mg/L	1	10/11/2013 1:10:08 PM	R14004
Manganese	0,59	0.0020		mg/L	1	10/11/2013 1:10 08 PM	R14004
Potassium	4.0	1.0		mg/L	1	10/11/2013 1:10:08 PM	R14004
Sodium	490	10	•	mg/L	10	10/14/2013 12:34:06 PI	M R14049
SM2340B: HARDNESS						Analyst	JLF
Hardness (As CaCO3)	910	6.6		mg/L	1	10/11/2013 10:47:00 A	M R14004
EPA METHOD 8260B: VOLATILES						Analyst	cadg
Benzene	ND	1.0	1	μg/L	1	10/7/2013 11:25:32 PM	R13891
Toluene	ND	1.0	l	μg/L	1	10/7/2013 11:25:32 PM	R13891
Ethylbenzene	ND	1.0	l	μg/L	1	10/7/2013 11:25:32 PM	R13891
Methyl tert-butyl ether (MTBE)	ND	1.0	1	μg/L	1	10/7/2013 11:25:32 PM	R13891
1,2,4-Trimethylbenzene	ND	1.0	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
1,3,5-Trimethylbenzene	ND	1.0	)	µg/L	1	10/7/2013 11:25:32 PM	R13891
1,2-Dichloroethane (EDC)	ND	1.0	)	µg/L	1	10/7/2013 11:25:32 PM	R13891
1,2-Dibromoethane (EDB)	ND	1.0	)	µg/L	1	10/7/2013 11:25:32 PM	R13891
Naphthalene	ND	2.0	)	µg/L	1	10/7/2013 11:25:32 PM	R13891
1-Methylnaphthalene	ND	4.0	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
2-Methylnaphthalene	ND	4.0	}	μg/L	1	10/7/2013 11:25:32 PM	R13891
Acetone	ND	10	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
Bromobenzene	ND	1.0	)	µg/L	1	10/7/2013 11:25:32 PM	R13891
Bromodichloromethane	ND	1.0	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
Bromoform	ND	1.0	)	μ <b>g/L</b>	1	10/7/2013 11:25:32 PM	R13891
Bromomethane	ND	3.0	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
2-Butanone	ND	10	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
Carbon disulfide	ND	10	)	μg/L	1	10/7/2013 11:25:32 PM	R13891
Carbon Tetrachloride	ND	1.0	)	µg/L	1	10/7/2013 11:25:32 PM	R13891
Chlorobenzene	ND	1.0	)	μg/L	1	10/7/2013 11:25:32 PM	1 R13891
Chloroethane	ND	2.0	)	µg/L	1	10/7/2013 11:25:32 PM	1 R13891
Chloroform	ND	1.0	)	µg/L	1	10/7/2013 11:25:32 PM	I R13891

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

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/25/2013

CLIENT: Western Refining Southwest, Inc.

Project: **GBR** Quarterly Sampling

Lab ID: 1310301-001 Client Sample ID: Influent

Collection Date: 10/4/2013 11:40:00 AM

Received Date: 10/5/2013 10:00:00 AM

Analyses	Result	RL	Qual Units	DF D	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				FESTA	Analyst:	cadg
Chloromethane	ND	3.0	μg/L	1 .	10/7/2013 11:25:32 PM	R13891
2-Chlorotoluene	ND	1.0	μg/L	1 .	10/7/2013 11:25:32 PM	R13891
4-Chlorotoluene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
cis-1,2-DCE	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
cis-1,3-Dichloropropene	ND	1.0	μg/L	1 4	10/7/2013 11:25:32 PM	R13891
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Dibromochloromethane	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Dibromomethane	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,2-Dichlorobenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,3-Dichlorobenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,4-Dichlorobenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Dichlorodifluoromethane	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1-Dichloroethane	- ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1-Dichloroethene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,2-Dichloropropane	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,3-Dichloropropane	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
2,2-Dichloropropane	ND	2.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1-Dichloropropene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Hexachtorobutadiene	ND	1.0	μ <b>g/L</b>	1 1	10/7/2013 11:25:32 PM	R13891
2-Hexanone	ND	10	μ <b>g/</b> L	<b>1</b> 1	10/7/2013 11:25:32 PM	R13891
Isopropylbenzene	ND	1.0	μ <b>g/L</b>	<b>1</b> 1	10/7/2013 11:25:32 PM	R13891
4-Isopropyltoluene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
4-Methyl-2-pentanone	ND	10	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Methylene Chloride	ND	3.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
n-Butylbenzene	ND	3.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
n-Propylbenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
sec-Butylbenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Styrene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
tert-Butylbenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
Tetrachloroethene (PCE)	ND	1.0	µg/L	1 1	10/7/2013 11:25:32 PM	R13891
trans-1,2-DCE	NĐ	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
trans-1,3-Dichloropropene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1,1-Trichloroethane	ND	1.0	µg/L	1 1	10/7/2013 11:25:32 PM	R13891
1,1,2-Trichloroethane	ND	1.0	µg/L	1 1	10/7/2013 11:25:32 PM	R13891
Trichloroethene (TCE)	ND	1.0	µg/L	1 1	10/7/2013 11:25:32 PM	R13891

Matrix: AQUEOUS

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDIimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Sample pH greater than 2 for VOA and TOC only.
- P
- Reporting Detection Limit RL

### **Analytical Report** Lab Order 1310301

Date Reported: 10/25/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Quarterly Sampling

Lab ID: 1310301-001 Client Sample ID: Influent

Collection Date: 10/4/2013 11:40:00 AM

Received Date: 10/5/2013 10:00:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst	: cadg
Trichlorofluoromethane	ND	1.0		μg/L	1	10/7/2013 11:25:32 PM	R13891
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/7/2013 11:25:32 PM	R13891
Vinyl chloride	ND	1.0		μg/L	1	10/7/2013 11:25:32 PM	R13891
Xylenes, Total	ND	1.5		μg/L	1	10/7/2013 11:25:32 PM	R13891
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	10/7/2013 11:25:32 PM	R13891
Surr: 4-Bromofluorobenzene	96.5	70-130		%REC	1	10/7/2013 11:25:32 PM	R13891
Surr: Dibromofluoromethane	109	70-130		%REC	1	10/7/2013 11:25:32 PM	R13891
Surr: Toluene-d8	98.5	70-130		%REC	1	10/7/2013 11:25:32 PM	R13891
SM2510B: SPECIFIC CONDUCTANCE						Analyst	: JML
Conductivity	3300	0.010		µmhos/cm	1	10/7/2013 4:36:57 PM	R13890
SM4500-H+B: PH						Analyst	: JML
pH	7.26	1.68	Н	pH units	1	10/7/2013 4:36:57 PM	R13890
SM2320B: ALKALINITY						Analyst	: JML
Bicarbonate (As CaCO3)	420	20		mg/L CaCO3	1	10/7/2013 4:36:57 PM	R13890
Carbonale (As CaCO3)	ND	2.0		mg/L CaCO3	1	10/7/2013 4:36:57 PM	R13890
Total Alkalinity (as CaCO3)	420	20		mg/L CaCO3	1	10/7/2013 4:36:57 PM	R13890
SM2540C MOD: TOTAL DISSOLVED SO	DLIDS					Analyst	t: KS
Total Dissolved Solids	2740	20.0	*	mg/L	1	10/10/2013 1:30:00 PM	9728

Matrix: AQUEOUS

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

- Sample pH greater than 2 for VOA and TOC only. P
- Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/25/2013

CLIENT: Western Refining Southwest, Inc.

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GBR Quarterly Sampling

**Lab ID:** 1310301-002

Project:

Client Sample ID: Effluent

Collection Date: 10/4/2013 11:34:00 AM

Received Date: 10/5/2013 10:00:00 AM

Calcium   300   5.0   mg/L   5   10/11/2013 1:15:54 PM   R14004	Analyses	200 Print, Call St.	Result	RL	Qual	Units	DF	Date Analyzed	Batch
Chloride	EPA METH	IOD 300.0: ANIONS	_	•				Analys	t: JRR
Bromide	Fluoride		0.68	0,10		mg/L	1	10/8/2013 10:13:37 AM	/ R13948
Phosphorus, Orthophosphate (As P; ND 10 H mg/L 20 10/8/2013 10.26.01 AM R13948	Chloride		85	10		mg/L	20	10/8/2013 10:26:01 AM	/ R13948
Sulfate	Bromide		0.40	0.10		mg/L	1	10/8/2013 10:13:37 AM	A R13948
Nitrate-Nitrite as N	Phosphoru	is, Orthophosphate (As P)	ND	10	Н	mg/L	20	10/8/2013 10:26:01 AM	A R13948
Calcium	Sulfate		1400	25	•	mg/L	50	10/10/2013 4:48:58 PM	A R14005
Calcium         300         5.0         mg/L         5         10/11/2013 1:15:54 PM         R14004 Iron         ND         0.020         mg/L         1         10/11/2013 1:13:55 PM         R14004 R4004 Magnesium         31         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 Magnesium         31         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 R14004 Magnesium         4.1         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 Magnesium         4.1         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 Magnesium         4.1         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 Magnesium         5.0         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 Magnesium         7.0         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004 R14004 Magnesium         7.0         1.0	Nitrate+Nit	rite as N	ND	1.0		mg/L	5	10/9/2013 4:27:47 PM	R13985
Iron	EPA METH	IOD 200.7: METALS						Analys	t: JLF
Magnesium         31         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004           Manganese         0.70         0.0020         * mg/L         1         10/11/2013 1:13:55 PM         R14004           Potassium         4.1         1.0         mg/L         1         10/11/2013 1:13:55 PM         R14004           Sodium         510         10         mg/L         1         10/11/2013 1:256.08 PM R14004           SM2340B: HARDNESS         Analyst: JLF           Hardness (As CaCO3)         890         6.6         mg/L         1         10/11/2013 10:47.00 AM R14004           EPA METHOD 8260B: VOLATILES           Benzene         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM R13891           Toluene         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM R13891           Elhylbenzene         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM R13891           L2,4-Trimethylbenzene         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM R13891           1,2-Dibromoethane (EDC)         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM	Calcium		300	5.0		mg/L	5	10/11/2013 1:15:54 PM	/ R14004
Manganese   0.70   0.0020   mg/L   1 10/11/2013 1:13:55 PM R14004	Iron		ND	0.020		mg/L	1	10/11/2013 1:13:55 PM	1 R14004
Potassium   Sodium   Sodium   Solid   10   mg/L   10   10/11/2013 1:13:55 PM R14004   Sodium   Sodium   Solid   10   mg/L   10   10/14/2013 1:2:36:08 PM R14049   SM2340B: HARDNESS	Magnesiun	n	31	1.0		mg/L	1	10/11/2013 1:13:55 PM	/ R14004
Sodium	Manganes	e	0.70	0.0020	*	mg/L	1	10/11/2013 1:13:55 PM	R14004
SM2340B: HARDNESS   B890   6.6   mg/L   1   10/11/2013 10:47:00 AM R14004	Potassium		4.1	1.0		mg/L	1	10/11/2013 1:13:55 PM	R14004
Hardness (As CaCO3)	Sodium		510	10		mg/L	10	10/14/2013 12:36:08 P	M R14049
Benzene         ND         1.0         μg/L         1         1 0/8/2013 12:51:31 AM         R13891           Toluene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Ethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Methyl tert-butyl ether (MTBE)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2,4-Trimethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2,4-Trimethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dichloroethane (EDC)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Naphthalene         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1-Methylnaphthalene         ND         4.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           2-Methylnaphthalene	SM2340B:	HARDNESS						Analys	t: JLF
Benzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Toluene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Ethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Methyl tert-butyl ether (MTBE)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2,4-Trimethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,3,5-Trimethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDC)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibrom	Hardness (	(As CaCO3)	890	6,6		mg/L	1	10/11/2013 10:47:00 A	M R14004
Toluene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Ethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Methyl tert-butyl ether (MTBE)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2,4-Trimethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,3,5-Trimethylbenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dichloroethane (EDC)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891	EPA METH	IOD 8260B: VOLATILES						Analys	t: cadg
Ethylbenzene ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2.4-Trimethylbenzene ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.3.5-Trimethylbenzene ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.3.5-Trimethylbenzene ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Dichloroethane (EDC) ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Dibromoethane (EDB) ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Dibromoethane (EDB) ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Dibromoethane (EDB) ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Dibromoethane ND 2.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Methylnaphthalene ND 4.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Methylnaphthalene ND 4.0 µg/L 1 10/8/2013 12.51:31 AM R13891 Acctone ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891 1.2-Dibromoethane ND 1.0 µg/L 1 10/8/2013 12.51:31 AM R13891	Benzene		ND	1.0		μg/L	1	10/8/2013 12:51:31 AM	R13891
Methyl tert-butyl ether (MTBE)         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           1,2,4-Trimethylbenzene         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           1,3,5-Trimethylbenzene         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           1,2-Dichloroethane (EDC)         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           1,2-Dibromoethane (EDB)         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           Naphthalene         ND         2.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           1-Methylnaphthalene         ND         4.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           2-Methylnaphthalene         ND         4.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           4-Cetone         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           Bromobenzene         ND         1.0         µg/L         1         10/8/2013 12.51:31 AM         R13891           Bromoform <td>Toluene</td> <td></td> <td>ND</td> <td>1.0</td> <td></td> <td>μg/L</td> <td>1</td> <td>10/8/2013 12:51:31 AM</td> <td>R13891</td>	Toluene		ND	1.0		μg/L	1	10/8/2013 12:51:31 AM	R13891
1,2,4-Trimethylbenzene ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1,3,5-Trimethylbenzene ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1,2-Dichloroethane (EDC) ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1,2-Dibromoethane (EDB) ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1,2-Dibromoethane (EDB) ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1-Methylnaphthalene ND 4.0 µg/L 1 10/8/2013 12:51:31 AM R13891 2-Methylnaphthalene ND 4.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Acetone ND 10 µg/L 1 10/8/2013 12:51:31 AM R13891 Bromobenzene ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Bromodichloromethane ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Bromomethane ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Bromomethane ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Carbon disulfide ND 10 µg/L 1 10/8/2013 12:51:31 AM R13891 Carbon Tetrachloride ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Carbon Tetrachloride ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Carbon Tetrachloride ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane ND 2.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane ND 2.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane ND 2.0 µg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane ND 2.0 µg/L 1 10/8/2013 12:51:31 AM R13891	Ethylbenze	ene	ND	1.0		μg/L	1	10/8/2013 12 51:31 AM	R13891
1,3,5-Trimethylbenzene       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         1,2-Dichloroethane (EDC)       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         1,2-Dibromoethane (EDB)       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Naphthalene       ND       2.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         1-Methylnaphthalene       ND       4.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         2-Methylnaphthalene       ND       4.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Acetone       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromobenzene       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromoform       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromomethane       ND       3.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         2-Butanone       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891	Methyl tert	-butyl ether (MTBE)	ND	1.0		μg/L	1	10/8/2013 12 51:31 AM	R13891
1,2-Dichloroethane (EDC) ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1,2-Dibromoethane (EDB) ND 1.0 µg/L 1 10/8/2013 12:51:31 AM R13891 1.0 µg/L 1 10/8/2013 12:51:31 A	1,2,4-Trime	ethylbenzene	ND	1.0		µg/L	1	10/8/2013 12:51:31 AM	R13891
1,2-Dibromoethane (EDB)       ND       1.0       µg/L       1       10/8/2013 12:51:31 AM R13891         Naphthalene       ND       2.0       µg/L       1       10/8/2013 12:51:31 AM R13891         1-Methylnaphthalene       ND       4.0       µg/L       1       10/8/2013 12:51:31 AM R13891         2-Methylnaphthalene       ND       4.0       µg/L       1       10/8/2013 12:51:31 AM R13891         Acetone       ND       10       µg/L       1       10/8/2013 12:51:31 AM R13891         Bromobenzene       ND       1.0       µg/L       1       10/8/2013 12:51:31 AM R13891         Bromoform       ND       1.0       µg/L       1       10/8/2013 12:51:31 AM R13891         Bromomethane       ND       3.0       µg/L       1       10/8/2013 12:51:31 AM R13891         2-Butanone       ND       10       µg/L       1       10/8/2013 12:51:31 AM R13891         Carbon disulfide       ND       10       µg/L       1       10/8/2013 12:51:31 AM R13891         Carbon Tetrachloride       ND       1.0       µg/L       1       10/8/2013 12:51:31 AM R13891         Chlorobenzene       ND       1.0       µg/L       1       10/8/2013 12:51:31 AM R13891         Chloroethan	1,3,5-Trime	ethylbenzene	ND	1.0		μg/L	1	10/8/2013 12:51:31 AN	R13891
Naphthalene         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           1-Methylnaphthalene         ND         4.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           2-Methylnaphthalene         ND         4.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Acetone         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromoform         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromomethane         ND         3.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           2-Butanone         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon disulfide         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chlorobenzene         ND         1.0 <t< td=""><td>1,2-Dichlor</td><td>roethane (EDC)</td><td>ND</td><td>1.0</td><td></td><td>μg/L</td><td>1</td><td>10/8/2013 12:51:31 AN</td><td>R13891</td></t<>	1,2-Dichlor	roethane (EDC)	ND	1.0		μg/L	1	10/8/2013 12:51:31 AN	R13891
1-Methylnaphthalene ND 4.0 μg/L 1 10/8/2013 12:51:31 AM R13891 2-Methylnaphthalene ND 4.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Acetone ND 10 μg/L 1 10/8/2013 12:51:31 AM R13891 Bromobenzene ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Bromodichloromethane ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Bromoform ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Bromomethane ND 3.0 μg/L 1 10/8/2013 12:51:31 AM R13891 2-Butanone ND 10 μg/L 1 10/8/2013 12:51:31 AM R13891 Carbon disulfide ND 10 μg/L 1 10/8/2013 12:51:31 AM R13891 Carbon Tetrachloride ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Chlorobenzene ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Chlorobenzene ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane ND 2.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane ND 2.0 μg/L 1 10/8/2013 12:51:31 AM R13891 Chloroethane	1,2-Dibrom	noethane (EDB)	ND	1.0		µg/L	1	10/8/2013 12:51:31 AN	R13891
2-Methylnaphthalene       ND       4.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Acetone       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromobenzene       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromodichloromethane       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromoform       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Bromomethane       ND       3.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         2-Butanone       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891         Carbon disulfide       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891         Carbon Tetrachloride       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Chlorobenzene       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Chloroethane       ND       2.0       μg/L       1       10/8/2013 12:51:31 AM       R13891	Naphthaler	ne	ND	2.0		µg/L	1	10/8/2013 12:51:31 AN	R13891
Acetone         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromodichloromethane         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromoform         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromomethane         ND         3.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           2-Butanone         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon disulfide         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM         R13891	1-Methylna	phthalene	ND	4.0		μg/L	1	10/8/2013 12:51:31 AN	R13891
Bromobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromodichloromethane         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromoform         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Bromomethane         ND         3.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           2-Butanone         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon disulfide         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM         R13891	2-Methylna	phthalene	ND	4.0		μg/L	1	10/8/2013 12:51:31 AN	R13891
Bromodichloromethane         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM         R13891           Bromoform         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM         R13891           Bromomethane         ND         3.0         µg/L         1         10/8/2013 12:51:31 AM         R13891           2-Butanone         ND         10         µg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon disulfide         ND         10         µg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon Tetrachloride         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM         R13891           Chlorobenzene         ND         1.0         µg/L         1         10/8/2013 12:51:31 AM         R13891           Chloroethane         ND         2.0         µg/L         1         10/8/2013 12:51:31 AM         R13891	Acetone		ND	10		µg/L	1	10/8/2013 12:51:31 AN	R13891
Bromoform         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM R13891           Bromomethane         ND         3.0         μg/L         1         10/8/2013 12:51:31 AM R13891           2-Butanone         ND         10         μg/L         1         10/8/2013 12:51:31 AM R13891           Carbon disulfide         ND         10         μg/L         1         10/8/2013 12:51:31 AM R13891           Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM R13891           Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM R13891	Bromobena	zene	ND	1.0		µg/L	1	10/8/2013 12:51:31 AM	1 R13891
Bromomethane         ND         3.0         μg/L         1         10/8/2013 12:51:31 AM R13891           2-Butanone         ND         10         μg/L         1         10/8/2013 12:51:31 AM R13891           Carbon disulfide         ND         10         μg/L         1         10/8/2013 12:51:31 AM R13891           Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM R13891           Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM R13891	Bromodich	foromethane	ND	1.0		µg/L	1	10/8/2013 12:51:31 AN	1 R13891
2-Butanone       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891         Carbon disulfide       ND       10       μg/L       1       10/8/2013 12:51:31 AM       R13891         Carbon Tetrachloride       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Chlorobenzene       ND       1.0       μg/L       1       10/8/2013 12:51:31 AM       R13891         Chloroethane       ND       2.0       μg/L       1       10/8/2013 12:51:31 AM       R13891	Bromoform		ND	1.0		µg/L	1	10/8/2013 12:51:31 AN	R13891
Carbon disulfide         ND         10         μg/L         1         10/8/2013 12:51:31 AM         R13891           Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM         R13891	Bromomet	hane	ND	3.0		µg/L	1	10/8/2013 12:51:31 AN	R13891
Carbon Tetrachloride         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM         R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM         R13891	2-Butanone	е	ND	10		μ <b>g/L</b>	1	10/8/2013 12:51:31 AN	1 R13891
Chlorobenzene         ND         1.0         μg/L         1         10/8/2013 12:51:31 AM R13891           Chloroethane         ND         2.0         μg/L         1         10/8/2013 12:51:31 AM R13891	Carbon dis	ulfide	ND	10		µg/L	1	10/8/2013 12:51:31 AN	1 R13891
Chloroethane ND 2.0 μg/L 1 10/8/2013 12:51:31 AM R13891	Carbon Te	trachloride	ND	1.0		µg/L	1	10/8/2013 12:51:31 AN	R13891
100 200 120 101 1110 11100 1	Chlorobena	zene	ND	1.0		µg/L	1	10/8/2013 12:51:31 AN	R13891
Chloroform ND 1.0 μg/L 1 10/8/2013 12:51:31 AM R13891	Chloroetha	ine	ND	2.0		µg/L	1	10/8/2013 12:51:31 AN	1 R13891
	Chloroform		ND	1.0		µg/L	1	10/8/2013 12:51:31 AN	1 R13891

Matrix: AQUEOUS

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

### Analytical Report Lab Order 1310301

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/25/2013

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Effluent

Project: GBR Quarterly Sampling

Collection Date: 10/4/2013 11:34:00 AM

Lab ID: 1310301-002

Matrix: AQUEOUS Received Date: 10/5/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analy	st: cadg
Chloromethane	ND	3.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
2-Chlorotoluene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
4-Chlorotoluene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
cis-1,2-DCE	ND	1.0	µg/L	1	10/8/2013 12:51:31 A	M R1389
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Dibromochloromethane	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Dibromomethane	ND	1.0	μ <b>g/L</b>	1	10/8/2013 12:51:31 A	M R1389
1,2-Dichlorobenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,3-Dichlorobenzene	ND	1.0	µg/L	1	10/8/2013 12:51:31 A	M R1389
1,4-Dichlorobenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Dichlorodifluoromethane	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,1-Dichloroethane	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,1-Dichloroethene	ND	1,0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,2-Dichloropropane	ND	1,0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,3-Dichloropropane	ND	1.0	µg/L	1	10/8/2013 12:51:31 A	M R1389
2,2-Dichloropropane	ND	2.0	µg/L	1	10/8/2013 12:51:31 A	M R1389
1,1-Dichloropropene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Hexachlorobutadiene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
2-Hexanone	ND	10	μg/L	1	10/8/2013 12:51:31 A	M R1389
Isopropylbenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
4-Isopropyltoluene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
4-Methyl-2-pentanone	ND	10	μg/L	1	10/8/2013 12:51:31 A	M R1389
Methylene Chloride	ND	3.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
n-Butylbenzene	ND	3.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
n-Propylbenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
sec-Butylbenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Styrene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
tert-Butylbenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Tetrachloroethene (PCE)	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
trans-1,2-DCE	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
trans-1,3-Dichloropropene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,1,1-Trichloroethane	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
1,1,2-Trichloroethane	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389
Trichloroethene (TCE)	ND	1.0	μg/L	1	10/8/2013 12:51:31 A	M R1389

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSD limit
- RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 5 of 21

- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1310301

Date Reported: 10/25/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Project: GBR Quarterly Sampling

Lab ID: 1310301-002

Client Sample ID: Effluent

Collection Date: 10/4/2013 11:34:00 AM

Received Date: 10/5/2013 10:00:00 AM

Analyses		Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD	8260B: VOLATILES				15.0	Analys	t: cadg
Trichlorofluoro	methane	ND	1.0	μg/L	1	10/8/2013 12:51:31 AM	A R1389
1,2,3-Trichloro	propane	ND	2.0	μg/L	1	10/8/2013 12:51:31 AM	R1389
Vinyl chloride		ND	1.0	μg/L	1	10/8/2013 12:51:31 AM	R1389
Xylenes, Total		ND	1.5	μg/L	1	10/8/2013 12:51:31 AM	R1389
Surr: 1,2-Did	chloroethane-d4	101	70-130	%REC	1	10/8/2013 12:51:31 AM	R1389
Surr: 4-Bron	nofluorobenzene	101	70-130	%REC	. 1	10/8/2013 12:51:31 AM	R1389
Surr: Dibron	nofluoromethane	104	70-130	%REC	1	10/8/2013 12:51:31 AM	R1389
Surr: Toluer	ne-d8	101	70-130	%REC	1	10/8/2013 12:51:31 AM	R1389
SM2510B: SPI	ECIFIC CONDUCTANCE					Analys	t: JML
Conductivity		3300	0.010	µmhos/cm	1	10/7/2013 4:57:40 PM	R1389
SM4500-H+B:	PH					Analys	t: JML
pH		7.24	1.68	H pH units	1	10/7/2013 4:57:40 PM	R13890
SM2320B: ALI	KALINITY					Analys	t: JML
Bicarbonate (A	As CaCO3)	440	20	mg/L CaCO	3 1	10/7/2013 4:57:40 PM	R13890
Carbonate (As	CaCO3)	ND	2.0	mg/L CaCO	3 1	10/7/2013 4:57:40 PM	R13890
Total Alkalinity	(as CaCO3)	440	20	mg/L CaCO	3 1	10/7/2013 4:57:40 PM	R13890
SM2540C MOI	D: TOTAL DISSOLVED SO	LIDS				Analys	t: KS
Total Dissolved	d Solids	2730	20.0	* mg/L	1	10/10/2013 1:30:00 PM	9728

Matrix: AQUEOUS

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1310301

Date Reported: 10/25/2013

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Quarterly Sampling Collection Date:

Lab ID: 1310301-003 Matrix: TRIP BLANK Received Date: 10/5/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	: cadg
Benzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Toluene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Ethylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Naphthalene	ND	2.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1-Methylnaphthalene	ND	4.0	μ <b>g/L</b>	1	10/8/2013 1:20:08 AM	R1389
2-Methylnaphthalene	ND	4.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Acetone	ND	10	μg/L	1	10/8/2013 1:20:08 AM	R1389
Bromobenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Bromodichloromethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Bromoform	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Bromomethane	ND	3.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
2-Butanone	ND	10	μg/L	1	10/8/2013 1:20:08 AM	R1389
Carbon disulfide	ND	10	μg/L	1	10/8/2013 1:20:08 AM	R1389
Carbon Tetrachloride	ND	1.0	µg/L	1	10/8/2013 1:20:08 AM	R1389
Chlorobenzene	ND	1:0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Chloroethane	ND	2.0	μg/L	1	10/8/2013 1:20 08 AM	R1389
Chloroform	ND	1.0	µg/L	1	10/8/2013 1:20:08 AM	R1389
Chloromethane	ND	3.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
2-Chlorotoluene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
4-Chiorotoluene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
cis-1,2-DCE	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	10/8/2013 1:20:08 AM	R1389
Dibromochloromethane	ND	1.0	µg/L	1	10/8/2013 1:20:08 AM	R1389
Dibromomethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,2-Dichlorobenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,3-Dichlorobenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,4-Dichlorobenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
Dichlorodifluoromethane	ND	1.0	µg/L	1	10/8/2013 1:20:08 AM	R1389
1,1-Dichloroethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,1-Dichloroethene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
1,2-Dichloropropane	ND	1.0	µg/L	1	10/8/2013 1:20:08 AM	R1389
1,3-Dichloropropane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R1389
2,2-Dichloropropane	ND	2.0	μg/L	1	10/8/2013 1:20:08 AM	R1389

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- 11 Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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- P Sample pH greater than 2 for VOA and TOC only.
- RI. Reporting Detection Limit

### Analytical Report Lab Order 1310301

Date Reported: 10/25/2013

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: GBR Quarterly Sampling

**Collection Date:** 

Lab ID: 1310301-003

Matrix: TRIP BLANK

Received Date: 10/5/2013 10:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	cadg
1,1-Dichloropropene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Hexachlorobutadiene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
2-Hexanone	ND	10	μg/L	1	10/8/2013 1:20:08 AM	R13891
Isopropylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
4-Isopropyltoluene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
4-Methyl-2-pentanone	ND	10	μg/L	1	10/8/2013 1:20:08 AM	R13891
Methylene Chloride	ND	3.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
n-Butylbenzene	ND	3.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
n-Propylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
sec-Butylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Styrene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
tert-Butylbenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
1,1,2,2-Tetrachloroethane	ND	2.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Tetrachloroethene (PCE)	NĐ	1.0	μg/L ■	1	10/8/2013 1:20:08 AM	R13891
trans-1,2-DCE	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
trans-1,3-Dichloropropene	ND	1.0	μg/L	= 1 :	10/8/2013 1:20:08 AM	R13891
1,2,3-Trichlorobenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
1,1,1-Trichloroethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
1,1,2-Trichloroethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Trichloroethene (TCE)	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Trichlorofluoromethane	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
1,2,3-Trichloropropane	ND	2.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Vinyl chloride	ND	1.0	μg/L	1	10/8/2013 1:20:08 AM	R13891
Xylenes, Total	ND	1.5	μg/L	1	10/8/2013 1:20:08 AM	R13891
Surr: 1,2-Dichloroethane-d4	104	70-130	%REC	1	10/8/2013 1:20:08 AM	R13891
Surr: 4-Bromofluorobenzene	99.5	70-130	%REC	1	10/8/2013 1:20:08 AM	R13891
Surr: Dibromofluoromethane	108	70-130	%REC	1	10/8/2013 1:20:08 AM	R13891
Sum: Toluene-d8	104	70-130	%REC	1	10/8/2013 1:20:08 AM	R13891

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 8 of 21

- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301 25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID MB	Samp	Туре: МЕ	BLK	Tes	Code: El	PA Method	200.7: Metals			
Client ID: PBW	Bato	h ID: R1	4004	R	lunNo: 1	4004				
Prep Date:	Analysis I	Date: 10	0/11/2013	S	eqNo: 4	00439	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0					111			
ron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Polassium	ND	1.0								
Sample ID LCS	Samp	SampType: LCS TestCode: EPA Method 200.7: Metals								
Client ID: LCSW	Bato	h ID: R1	4004	F	RunNo: 1	4004				
Prep Date:	Analysis	Date: 10	0/11/2013	5	SeqNo: 4	00440	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	100	85	115			
Iron	0.53	0.020	0.5000	0	107	85	115			
Magnesium	50	1.0	50.00	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.7	85	115			
Potassium	49	1.0	50.00	0	98.9	85	115			
Sample ID MB	Samp	SampType: MBLK TestCode: EPA				PA Method	200.7: Metals	;		

Sample ID MB	SampType: MBL	K Test0	Code: EPA Method	200.7: Metals			
Client ID: PBW	Batch ID: R14	<b>049</b> Ru	inNo: 14049				
Prep Date:	Analysis Date: 10/	14/2013 Se	eqNo: <b>401963</b>	Units: mg/L			
Analyte	Result PQL	SPK value SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND 1.0						

Sample ID LCS	SampT	ype: LC	S	Tes	Code: El	A Method	200.7: Metals	;		
Client ID: LCSW	Batch	ID: R1	4049	F	lunNo: 1	4049				
Prep Date:	Analysis D	ate: 10	/14/2013	S	eqNo: 4	01964	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	51	1.0	50.00	0	103	85	115			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

	arterly Sam							0-	Heart V	h
Sample ID A5	SampT	ype: CC	V_5	Te	tCode: E	PA Method	300.0: Anion	s		
Client ID: BatchQC	Batch	ID: R1	3948		RunNo: 1	3948				
Prep Date:	Analysis D	ate: 10	0/8/2013		SeqNo: 3	98454	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	1.6	0.10	1.600	0	102	90	110			
Chloride	7.8	0.50	8.000	0	97.1	90	110			
Iromide	7.9	0.10	8.000	0	98.5	90	110			
Phosphorus, Orthophosphate (As P	7.9	0.50	8.000	0	98.3	90	110	3.0		
Sample ID MB	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	300.0: Anion	5		- 3
Client ID: PBW	Batch	ID: R1	3948		RunNo: 1	3948				
Prep Date:	Analysis D	ate: 10	0/8/2013		SeqNo: 3	98456	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	ND	0.10					(4)			
hloride	ND	0.50								
romide	ND	0.10								
hosphorus, Orthophosphate (As P	ND	0.50								
Sample ID LCS	SampT	ype: LC	S	Tes	tCode: El	PA Method	300.0: Anion	5		
Client ID: LCSW	Batch	ID: R1	3948		RunNo: 1	3948				
Prep Date:	Analysis D	ate: 10	/8/2013		SeqNo: 3	98457	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	0.54	0.10	0.5000	0	107	90	110	M		-
hloride	5.1	0.50	5.000	0	101	90	110			
romide	2.6	0.10	2,500	0	103	90	110			
hosphorus, Orthophosphate (As P	5.2	0.50	5.000	0	103	90	110			
Sample ID A6	SampT	ype: CC	V_6	Tes	tCode: El	PA Method	300.0: Anion	\$		
Client ID: BatchQC	Batch	ID: R1	3948		RunNo: 1	3948				
Prep Date:	Analysis Da	ate: 10	/8/2013		SeqNo: 3	98466	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luoride	2.6	0.10	2.400	0	107	90	110			
hloride	12	0.50	12.00	0	102	90	110			
romide	12	0.10	12,00	0	100	90	110			
hosphorus, Orthophosphate (As P	12	0.50	12.00	0	103	90	110			
Sample ID A4	SampT	ype: CC	V_4	TestCode: EPA Method 300.0: Anions						
Client ID: BatchQC	Batch	ID: R1	3948	_ F	RunNo: 1:	3948				
Prep Date:	Analysis Da	ate: 10	/8/2013		SeqNo: 3		Units: mg/L			

#### Qualifiers:

Analyte

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

LowLimit

HighLimit

%RPD

- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

SPK value SPK Ref Val %REC

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Qual

**RPDLimit** 

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1

1310301 25-Oct-13

Client:

Western Refining Southwest, Inc.

	arterly Sampli		i, iiio.							
Sample ID A4	SampType	CC	V_4	TestCode: EPA Method 300.0; Anions						
Client ID: BatchQC	Batch ID: R13948			RunNo: 13948						
Prep Date:	Analysis Date: 10/8/2013			SeqNo: 398478			Units: mg/L			
Analyte	Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.0 0	0.10	1.000	0	103	90	110			
Chloride	4.7	0.50	5.000	0	93.8	90	110			
Bromide		0.10	5.000	0	96.9	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.3	90	110			
Sample ID A5	SampType	: CC	V_5	TestCode: EPA Method 300.0: Anions						
Client ID: BatchQC	Batch ID:	R13	3948	RunNo: 13948						
Prep Date:	Analysis Date: 10/8/2013			SeqNo: 398490			Units: mg/L			
Analyte	Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
luonde	1,7	0.10	1.600	0	107	90	110			
Chloride	7,8	0.50	8.000	0	97.3	90	110			
Bromide	7.8	0.10	8.000	0	98.1	90	110			
Phosphorus, Orthophosphate (As P	7.9	0.50	8.000	0	98.8	90	110			
Sample ID A6	SampType: CCV_6 TestCode: EPA Method 300.0: Anions									
Client ID: BatchQC	Batch ID: R13948			RunNo: 13948						
Prep Date:	Analysis Date: 10/8/2013			5	SeqNo 3	98502	Units: mg/L			
Analyte	Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
fluoride	2.7	0.10	2,400	0	111	90	110			S
Chloride	12 (	0.50	12.00	0	102	90	110			
Bromide	12	0.10	12.00	0	100	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	103	90	110			
Sample ID MB	SampType: MBLK TestCode: EPA Method 300.0: Anions									
Client ID: PBW	Batch ID: R13948			RunNo: 13948						
Prep Date:	Analysis Date: 10/8/2013			SeqNo: 398512			Units: mg/L			
Analyte		QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.10								
Chloride		0.50								
Bromide		0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sample ID LCS	SampType	e: LC	s	TestCode: EPA Method 300.0: Anions				\$		
Client ID: LCSW	Batch ID: R13948			RunNo: 13948						
Prep Date:	Analysis Date	: 10	)/8/2013	5	SeqNo: 3	398513	Units: mg/L			

#### Qualifiers:

Analyte

Value exceeds Maximum Contaminant Level.

Result

**PQL** 

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

HighLimit

%RPD

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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**RPDLimit** 

- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

SPK value SPK Ref Val %REC LowLimit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID LCS	SampT	ype: LC	S	Tes	tCode: E	PA Method	300.0: Anion	S		
Client ID: LCSW	Batch	ID: R1	3948	F	RunNo: 1	3948				
Prep Date:	Analysis D	ate: 10	)/8/2013		SeqNo: 3	98513	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	107	90	110			
Chloride	4.7	0.50	5.000	0	93,9	90	110			
Bromide	2.4	0.10	2.500	0	94.2	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.1	90	110			
Sample ID A4	SampT	ype: CC	V_4	Tes	tCode: E	PA Method	300.0: Anion	S		18
Client ID: BatchQC	Batch	ID: R1	3948	F	RunNo: 1	3948				
Prep Date:	Analysis D	ate: 10	/8/2013		SeqNo: 3	98514	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sample ID A4	Sampi	ype: CC	V_4	res	(Code: E	PA Method	300.0:	Anion	5		
Client ID: BatchQC	Batch	n ID: <b>R1</b>	3948	F	RunNo: 1	3948					
Prep Date:	Analysis D	)ate: 10	/8/2013		SeqNo: 3	98514	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	High	Limit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	106	90		110			
Chloride	4.7	0.50	5.000	0	93.8	90		110			
Bromide	4.9	0.10	5.000	0	97.0	90		110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.9	90		110			

Sample ID A5	SampT	уре: СС	V_5	Tes	tCode: E	PA Method	300.0: Anion:	5		
Client ID: BatchQC	Batch	ID: R1	3948	F	RunNo: 1	3948				
Prep Date:	Analysis D	ate: 10	)/8/2013	- 5	SeqNo: 3	98526	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.7	0.10	1.600	0	108	90	110			
Chloride	7.8	0.50	8.000	0	97.7	90	110			
Bromide	7.9	0.10	8.000	0	98.6	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	101	90	110			

Sample ID A6		SampType: CCV_6			tCode: El	PA Method	s			
Client ID: BatchQC	Batch	1D: R1	3948	F	3948					
Prep Date:	Analysis D	ate: 10	/9/2013		SeqNo: 3	98538	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.7	0.10	2.400	0	111	90	110		<del>-</del> -	S
Chloride	12	0.50	12.00	0	104	90	110			
Bromide	12	0.10	12.00	0	101	90	110			
Phosphorus, Orthophosphate (As P	12	0.50	12.00	0	104	90	110			

Sample ID A4	SampType: CCV_4	TestCode: EPA Method	300.0: Anions	
Client ID: BatchQC	Batch ID: R13948	RunNo: 13948		
Prep Date:	Analysis Date: 10/9/2013	SeqNo: 398550	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#: 1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project: GBR Qu	arterly Sam	pling								
Sample ID A4	SampT	ype: CC	V_4	Test	Code: EF	PA Method	300.0: Anions			
Client ID: BatchQC	Batch	ID: R1	3948	R	unNo: 1	3948				
Prep Date:	Analysis D	ate: 10	/9/2013	- s	eqNo: 39	98550	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	1.000	0	106	90	110			
Chloride	4.8	0.50	5.000	0	95.2	90	110			
Bromide	4.8	0.10	5.000	0	95.8	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	95.0	90	110			
Sample ID A5	SampT	ype: CC	V_5	Test	Code; EF	A Method	300.0: Anions	;		
Client ID: BatchQC	Batch	ID: R1	3948	R	unNo: 1	3948				
Prep Date:	Analysis D	ate: 10	/9/2013	S	eqNo: 3	98560	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.8	0.10	1.600	0	110	90	110			
Chloride	7.8	0.50	8.000	0	97.7	90	110			
Bromide	7.9	0.10	8,000	0	98.5	90	110			
Phosphorus, Orthophosphate (As P	8.0	0.50	8.000	0	99.9	90	110			
Sample ID A5	SampT	ype: CC	:V_5	Tes	Code: El	PA Method	300.0: Anions		•	
Client ID: BatchQC	Batcl	ı ID:: R1	3985	F	lunNo: 1	3 <del>9</del> 85				
Prep Date:	Analysis D	ale: 10	)/9/2013	S	ieqNo: 3	99708	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	8.0	0.20	8.000	0	99.4	90	110			
Sample ID MB	Sampl	vne: ME	21 1/2	T	Codo: El				•	
		Abor me	3 LIV	res	Code. El	PA Method	300.0: Anion:	•		
Client ID: PBW	Batcl	D R1			RunNo: 1		300.0: Anion:	•		
Client ID: PBW Prep Date:	Batcl Analysis [	n ID: R1	3985	F		3985	300.0: Anions Units: mg/L	•		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		n ID: R1	3985 0/9/2013	F	RunNo: 1 GeqNo: 3	3985 99710		%RPD	RPDLimit	Qual
Prep Date:	Analysis [	n ID: R1	3985 0/9/2013	F	RunNo: 1 GeqNo: 3	3985 99710	Units: mg/L		RPDLimit	Qual
Prep Date:	Analysis E Result ND	n ID: R1 Date: 10	3985 0/9/2013 SPK value	SPK Ref Val	RunNo: 1 GeqNo: 3 %REC	3985 99710 LowLimit	Units: mg/L	%RPD	RPDLimit	Qual
Prep Date: Analyte Nitrate+Nitrite as N	Analysis [ Result ND Samp[	PQL 0.20	3985 0/9/2013 SPK value	SPK Ref Val	RunNo: 1 GeqNo: 3 %REC	3985 99710 LowLimit PA Method	Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Prep Date: Analyte Nitrate+Nitrite as N Sample ID LCS	Analysis [ Result ND Samp[	PQL 0.20 0.10: R1	3985 0/9/2013 SPK value SS 3985	SPK Ref Val Tes	RunNo: 1 GeqNo: 3 %REC tCode: E	3985 99710 LowLimit PA Method 3985	Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Prep Date: Analyte Nitrate+Nitrite as N Sample ID LCS Client ID: LCSW	Analysis I	PQL 0.20 0.10: R1	3985 0/9/2013 SPK value :S 3985 0/9/2013	SPK Ref Val Tes	RunNo: 1 GeqNo: 3 %REC tCode: E	3985 99710 LowLimit PA Method 3985	Units: mg/L HighLimit	%RPD	RPDLimit RPDLimit	Qual

#### Qualifiers:

- Value exceeds Maximum Contaminant Level,
- Value above quantitation range E
- Analyte detected below quantitation limits 1
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

SampType: CCV\_4

Batch ID: R13985

Project:

Sample ID A4

Client ID: BatchQC

**GBR** Quarterly Sampling

Sample ID A6	SampType: CCV_6	Tes	Code: EPA Method	300.0: Anions	-		
Client ID: BatchQC	Batch ID: R13985		RunNo: <b>13985</b>				
Prep Date:	Analysis Date: 10/9/2	13	SeqNo: 399723	Units: mg/L			
Analyte	Result PQL SP	value SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	12 0.20	12.00 0	104 90	110			

TestCode: EPA Method 300.0: Anions

RunNo: 13985

Prep Date:	Analysis Date: 10/9/2013	SeqNo: 399735	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	Jal
Nitrate+Nitrite as N	4.8 0.20 5.000	0 95.5 90	110	
Sample ID A5	SampType: CCV_5	TestCode: EPA Method	300.0: Anions	¥
Client ID: BatchQC	Batch ID: R13985	RunNo: 13985		

Batch	ID: R1	3985	10 1 4 5	RunNo: 1	2005					
				1011110.	3903					
Analysis Da	ate: 10	/9/2013		SeqNo: 3	99747	Units: mg/L				
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
8.0	0.20	8,000	0	99.6	90	110				
	Result	Result PQL		Result PQL SPK value SPK Ref Val	Result PQL SPK value SPK Ref Val %REC	Result PQL SPK value SPK Ref Val %REC LowLimit	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Sample ID A5	SampType: CCV_5 TestCode: EPA Method 300.0: Anions	
Client ID: BatchQC	Batch ID: R14005 RunNo: 14005	
Prep Date:	Analysis Date: 10/10/2013 SeqNo: 400478 Units: mg/L	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Sulfate	20 0.50 20.00 0 99.0 90 110	

Sample ID MB	SampT	ype: ME	BLK	Tes	tCode; El	PA Method	300.0: Anion	s		- 4
Client ID: PBW	Batch	ID: R1	4005	F	RunNo: 1	4005				
Prep Date:	Analysis D	ate: 10	0/10/2013	S	SeqNo: 4	00480	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: R14005	RunNo: 14005
Prep Date:	Analysis Date: 10/10/2013	SeqNo: 400481 Units: mg/L
Analyte	Result PQL SPK value SI	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Sulfate	10 0,50 10,00	0 105 90 110

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1310301

25-Oct-13

Western Refining Southwest, Inc. Client: Project: **GBR Quarterly Sampling** TestCode: EPA Method 300.0: Anions Sample ID A6 SampType: CCV\_6 RunNo: 14005 Client ID: **BatchQC** Batch ID: R14005 Prep Date: Analysis Date: 10/10/2013 SeqNo: 400490 Units: mg/L SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Result LowLimit Qual Analyte 90 110 31 0.50 30.00 102 Sulfate Sample ID A4 SampType: CCV\_4 TestCode: EPA Method 300.0: Anions Batch ID: R14005 RunNo: 14005 Client ID: BatchQC Prep Date: SeqNo: 400502 Analysis Date: 10/10/2013 Units: mg/L %RPD **RPDLimit** SPK value SPK Ref Val %REC **HighLimit** Qual Analyte Result PQL LowLimit 12 0.50 12.50 94.1 90 110 Sulfate Sample ID A5 SampType: CCV\_5 TestCode: EPA Method 300.0: Anions Client ID: BatchQC Batch ID: R14005 RunNo: 14005 Analysis Date: 10/10/2013 SeqNo: 400514 Prep Date: Units: mg/L %RPD **RPDLimit** Qual SPK value SPK Ref Val %REC LowLimit **HighLimit** Result POL Analyte 90 110 Sulfate 20 0.50 20.00 97.6 Sample ID A6 SampType: CCV\_6 TestCode: EPA Method 300.0: Anions Client ID: **BatchQC** Batch ID: R14005 RunNo: 14005 Analysis Date: 10/10/2013 SeaNo: 400526 Units: ma/L Prep Date: Analyte Result SPK value SPK Ref Val %REC LowLimit **HighLimit** %RPD **RPDLimit** Qual Sulfate 0.50 30.00 99.4 110 Sample ID A4 SampType: CCV\_4 TestCode: EPA Method 300.0: Anions RunNo: 14005 Batch ID: R14005 Client ID: **BatchQC** Prep Date: Analysis Date: 10/10/2013 SeqNo: 400538 Units: mg/L HighLimit %RPD **RPDLimit** Qual Result **PQL** SPK value SPK Ref Val %REC LowLimit Analyte

Sample ID MB	SampType: MBLK	TestCode: EPA Method	300.0: Anions	
Client ID: PBW	Batch ID: R14005	RunNo: 14005		
Prep Date:	Analysis Date: 10/10/2013	SeqNo: 400546	Units: mg/L	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Sulfate	ND 0.50			

0

94.9

90

110

#### Qualifiers:

Sulfate

Value exceeds Maximum Contaminant Level.

12

0.50

12.50

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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# Hall Environmental Analysis Laboratory, Inc.

WO#

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID LCS	SampType; LCS	TestCode: EPA Method 300.0	0: Anions
Client ID: LCSW	Batch ID: R14005	RunNo: 14005	
Prep Date:	Analysis Date: 10/10/2013	SeqNo: 400547 Unit	ts: mg/L
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit Hig	ghLimit %RPD RPDLimit Qual
Sulfate	9,6 0,50 10,00	0 96.4 90	110

Odilate		10	0.50	20.00		31.2	30	110	- 11			
Sulfate		19	0.50	20.00	n	97.2	90	110				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Prep Date:		Analysis Da	te: 10	/10/2013	S	eqNo: 4	00550	Units: mg/L				
Client ID: B	BatchQC	Batch I	D: <b>R1</b>	4005	R	tunNo: 1	4005					9
Sample ID A	<b>\5</b>	SampTy	pe: CC	V_5	Test	Code: El	PA Method	300.0: Anions				- 4

Sample ID A6	SampT	ype: CC	:V_6	Tes	tCode: E	PA Method	300.0: Anion:	5			
Client ID: BatchQC	Batch	ID: R1	4005	F	RunNo: 1	4005					М
Prep Date:	Analysis D	ate: 10	)/11/2013	5	SeqNo: 4	00562	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sulfate	30	0.50	30.00	0	101	90	110				

Sample ID A4	SampT	ype: CC	V_4	Tes	Code: E	PA Method	300.0: Anion	S	- '		
Client ID: BatchQC	Batch	ID: R1	4005	F	RunNo: 1	14005					
Prep Date:	Analysis D	ate: 10	/11/2013	S	ieqNo: 4	100574	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sulfate	12	0.50	12.50	0	93.9	90	110				

Sample ID A5	SampTy	pe: CC	V_5	Tes	tCode: E	EPA Method	300.0: Anion	S			100
Client ID: BatchQC	Batch	ID: R1	4005	F	RunNo:	14005					
Prep Date:	Analysis Da	ite: 10	0/11/2013	8	SeqNo:	400586	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sulfate	20	0.50	20.00	0	98.1	90	110				

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Quarterly Sampling** 

Client   D.   PBW   Baich   D.   R13891   RunNo: 13891   Prep Date:   Analysis   Date:   10/7/2013   Seq.No:   395844   Units:   pg/L   Analyse   Result   Pol.   SPK value   SPK Ref Val   %REC   LowLinit   HighLimit   %RPD   RPDLimit   Qual   Result   Pol.   SPK value   SPK Ref Val   %REC   LowLinit   HighLimit   %RPD   RPDLimit   Qual   Result   Pol.   SPK value   SPK Ref Val   %REC   LowLinit   HighLimit   %RPD   RPDLimit   Qual   Result   Pol.   SPK value   SPK Ref Val   %REC   LowLinit   HighLimit   %RPD   RPDLimit   Qual   Result   Pol.   SPK value   SPK Ref Va	Sample ID 5mL rb	SampTy	ype: MBLK	Tes	stCode: EPA Method	8260B: VOLATI	LES	
Analyte	Client ID: PBW	Batch	ID: R13891	1	RunNo: 13891			
Benzene	Prep Date:	Analysis Da	ate: 10/7/2013	;	SeqNo: 396844	Units: µg/L		
Touene         ND         1.0           Ehyberzene         ND         1.0           Hewhyl lart- bulyl ether (MTBE)         ND         1.0           1.2.4-Trinethybenzene         ND         1.0           1.2Dickloroehane (EDC)         ND         1.0           1.2-Dickloroehane (EDB)         ND         1.0           Naphthalene         ND         2.0           1-Methyhaphthalene         ND         4.0           2-Methyaphthalene         ND         1.0           Bromodenzene         ND         1.0           Chlorobenzene         ND         1.0           L-Z-Dichromo-3-chloropropane         ND         1.0	Analyte	Result	PQL SPK va	lue SPK Ref Val	%REC LowLimit	HighLimit %	RPD RPDLimit	Qual
Ethythenzene         ND         1.0           Medhyl terhoulyl ether (MTBE)         ND         1.0           1.2.4-Trimethythenzene         ND         1.0           1.3.5-Trimethythenzene         ND         1.0           1.2.Delinoreehane (EDC)         ND         1.0           Naphthalene         ND         2.0           1-Methyhapshhalene         ND         4.0           2-Methyhapshhalene         ND         4.0           Azetone         ND         1.0           Bromodenzene         ND         1.0           Bromodelhorwalhane         ND         1.0           Bromodelhorwalhane         ND         1.0           Bromodelhoreane         ND         1.0           Bromodelhoreane         ND         1.0           Carbon Tetrachloide         ND         1.0           Carbon Tetrachloide         ND         1.0           Chlorodenane         ND         1.0           Chlorodorma         ND         1.0           Chlorodorma         ND         1.0           Chlorodorma         ND         1.0           Chlorodorbune         ND         1.0           Chlorodorbune         ND <t< td=""><td>Benzene</td><td>ND</td><td>1.0</td><td></td><td></td><td></td><td></td><td></td></t<>	Benzene	ND	1.0					
Methyl tert-butyl ether (MTBE)         ND         1.0           1.2,4-1 miterthybenzene         ND         1.0           1.2,5-1 miterthybenzene         ND         1.0           1.2-Dichtoroethane (EDC)         ND         1.0           1.2-Dichtoroethane (EDB)         ND         1.0           Naphthalene         ND         4.0           2-Methylaphthalene         ND         4.0           Acatone         ND         1.0           Bromodenzene         ND         1.0           Bromodenbane         ND         1.0           Bromodenbane         ND         1.0           Bromodenbane         ND         1.0           Bromodenbane         ND         1.0           Carbon fetrathinde         ND         1.0           Chloroethane         ND         1.0           Chloroethane         ND         1.0           Chloroethane         ND         1.0           Chloroethane         ND         1.0           Chlorocholune         ND         1.0           Chlorocholune         ND         1.0           Chlorocholune         ND         1.0           Chlorochopopane         ND         2.0 <td>Toluene</td> <td>ND</td> <td>1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Toluene	ND	1.0					
1.2.4-Trimethythenzene         ND         1.0           1.3.5-Trimethythenzene         ND         1.0           1.3.5-Trimethythenzene         ND         1.0           1.2-Olbromoethane (EDB)         ND         1.0           Naphthalene         ND         2.0           1-Methyhaphthalene         ND         4.0           2-Methyhaphthalene         ND         1.0           Bromodencane         ND         1.0           Bromodichloromethane         ND         1.0           Bromodenm         ND         1.0           Bromonethane         ND         1.0           Carbon of sulfide         ND         1.0           Carbon retrachoride         ND         1.0           Chlorobenzene         ND         1.0           Chlorodethane         ND         1.0 </td <td>Ethylbenzene</td> <td>ND</td> <td>1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Ethylbenzene	ND	1.0					
1.3.5-Trimethylbenzane         ND         1.0           1.2-Dichroneshane (EDC)         ND         1.0           1.2-Dichroneshane (EDR)         ND         1.0           Naphthalene         ND         2.0           1-Methylanghthalene         ND         4.0           2-Methylanghthalene         ND         4.0           Acetone         ND         1.0           Bromoderbane         ND         1.0           Bromodichromethane         ND         1.0           Bromodichromethane         ND         1.0           Bromonethane         ND         1.0           Carbon destide         ND         1.0           Chloroderzene         ND         1.0           Chlorodorm         ND         1.0           Chlorodorm         ND         1.0           Chlorodorm         ND         1.0           Chlorodorm         ND         1.0           Chlorodormehane         ND         1.0           4-Chlorodoluene         ND         1.0           4-Chlorodoluene         ND         1.0           5-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0	Methyl tert-butyl ether (MTBE)	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           Acetone         ND         1.0           Bromodenzene         ND         1.0           Bromodichloromethane         ND         1.0           Bromodenm         ND         1.0           Bromomethane         ND         1.0           Carbon disulfide         ND         1.0           Carbon disulfide         ND         1.0           Chloroethane         ND         1.0           Chloroethane         ND         1.0           Chloroform         ND         1.0           Chloroform         ND         1.0           Chloroform         ND         1.0           2-Chlorofoluene         ND         1.0           2-Chlorofoluene         ND         1.0           cis-1,3-Dichloropropane         ND         1.0           libromoethane         ND         1.0           libromoethane         ND         1.0           libromoethane         ND         1.0	1,2,4-Trimethylbenzene	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         1.0           Bromodenzene         ND         1.0           Bromodemine         ND         1.0           Bromoform         ND         1.0           Bromonethane         ND         1.0           Carbon disulfide         ND         1.0           Carbon tetrachloride         ND         1.0           Chlorobenzene         ND         1.0           Chlorobenzene         ND         1.0           Chloroform         ND         1.0           Chlorodelune         ND         1.0           4-Chlorotoluene         ND         1.0           45-12-DEC         ND         1.0           65-12-DEC         ND         1.0           12-Dibromo-3-chloropropane         ND         1.0           11-2-Dibromo-3-chloropropane         ND         1.0           11-2-Dichlorobenzene         ND         1.0           11-Dichlorobenzene         ND         1.0 </td <td>1,3,5-Trimethylbenzene</td> <td>ND</td> <td>1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene         ND         2.0           1-Methyfnaphthalene         ND         4.0           2-Methyfnaphthalene         ND         4.0           Acetone         ND         10           Bromodenzene         ND         1.0           Bromodenthoromethane         ND         1.0           Bromomethane         ND         3.0           2-Butanone         ND         10           Carbon disulfide         ND         1.0           Chlorobenzene         ND         1.0           Chlorobenzene         ND         1.0           Chlorodentane         ND         2.0           Chlorodentane         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           Dibromomethane         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene         ND         1.0 </td <td>1,2-Dichloroethane (EDC)</td> <td>ND</td> <td>1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	1,2-Dichloroethane (EDC)	ND	1.0					
1-Methylnaphthalene ND 4.0 2-Methylnaphthalene ND 10 Bromodichloromethane ND 1.0 Carbon disulfide ND 10 Carbon tetrachloride ND 1.0 Carbon tetrachloride ND 1.0 Chlorobenzene ND 1.0 Chloromethane ND 2.0 Chloroform ND 1.0 Chloromethane ND 3.0 2-Chloroformethane ND 3.0 2-Chloroformethane ND 1.0 Chloromethane ND 1.0 Cis-1,2-DCE ND 1.0 Cis-1,2-DCE ND 1.0 Dibromo-3-chloropropane ND 1.0 Dibromo-d-chloromethane ND 1.0	1,2-Dibromoethane (EDB)	ND	1.0					
2-Hedrylnaphthalene         ND         4.0           Acetone         ND         10           Bromobenzene         ND         1.0           Bromodichromelhane         ND         1.0           Bromonelhane         ND         3.0           2-Butanone         ND         10           Carbon disulfide         ND         10           Carbon flavachloride         ND         1.0           Chlorobenzene         ND         1.0           Chlorofoma         ND         1.0           Chlorofoma         ND         1.0           Chlorofobuene         ND         1.0           4-Chlorotoluene         ND         1.0           63-1,2-DCE         ND         1.0           63-1,3-Dichloropropene         ND         1.0           Dibromon-3-chloropropane         ND         1.0           Dibromonelhane         ND         1.0           Dibromonelhane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichloropropane         ND         1.0 </td <td>Naphthalene</td> <td>ND</td> <td>2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Naphthalene	ND	2.0					
Acetone         ND         10           Bromoberzene         ND         1.0           Bromofichromethane         ND         1.0           Bromofilm         ND         1.0           Bromomethane         ND         3.0           2-Butanone         ND         10           Carbon disulfide         ND         1.0           Carbon Tetrachloride         ND         1.0           Chlorobenzene         ND         1.0           Chlorothane         ND         1.0           Chlorothane         ND         1.0           Chlorothane         ND         1.0           2-Chlorotoluene         ND         1.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           5:1,2-DCE         ND         1.0           0biromochloromethane         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0 <tr< td=""><td>1-Methylnaphthalene</td><td>ND</td><td>4.0</td><td></td><td></td><td></td><td></td><td></td></tr<>	1-Methylnaphthalene	ND	4.0					
Bromodichloromethane         ND         1.0           Bromodichloromethane         ND         1.0           Bromodolm         ND         1.0           Bromomethane         ND         3.0           2 Butanone         ND         10           Carbon disulfide         ND         1.0           Chlorobenzene         ND         1.0           Chlorobenzene         ND         1.0           Chloroform         ND         1.0           Chloroform         ND         1.0           Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           45-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           Dibromochloromethane         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene         ND         1.0           1,1-Dichloropenae         ND         1.0           1,1-Dichloropenae         ND         1	2-Methylnaphthalene	ND	4.0					
Bromodichloromelhane         ND         1.0           Bromoderhane         ND         1.0           Bromomelhane         ND         3.0           2-Butanone         ND         10           Carbon disulfide         ND         10           Chlorobenzene         ND         1.0           Chlorobenzene         ND         1.0           Chlorodelhane         ND         1.0           Chloromethane         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           45-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           1,2-Dibromo-3-chloropropane         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           1,1-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene <t< td=""><td>Acetone</td><td>ND</td><td>10</td><td></td><td></td><td></td><td></td><td></td></t<>	Acetone	ND	10					
Bromolom         ND         1.0           Bromomethane         ND         3.0           2-Butanone         ND         10           Carbon disulfide         ND         10           Carbon Tetrachloride         ND         1.0           Chlorobenzene         ND         1.0           Chloroform         ND         1.0           Chloroform         ND         1.0           Chloroformethane         ND         1.0           4-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dichromo-3-chloropropane         ND         1.0           Dibromomethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,4-Dichloroethane         ND         1.0           1,1-Dichloroethane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,1-Dichloroethane         ND <t< td=""><td>Bromobenzene</td><td>ND</td><td>1.0</td><td></td><td></td><td></td><td></td><td></td></t<>	Bromobenzene	ND	1.0					
Bromomethane         ND         3.0           2-Butanone         ND         10           Carbon Tetrachloride         ND         10           Chlorobenzene         ND         1.0           Chloroform         ND         1.0           Chloroform         ND         1.0           Chloroformathane         ND         3.0           2-Chlorofoluene         ND         1.0           4-Chlorofoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         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           1,1-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene         ND         1.0           1,1-Dichloroptopane         ND         1.0           1,2-Dichloroptopane         ND         1.0           1,2-Dichloroptopane         ND	Bromodichloromethane	ND	1.0					
2-Butanone ND 10 Carbon disulfide ND 10 Carbon Tetrachloride ND 1.0 Chlorobenzene ND 1.0 Chlorobenzene ND 1.0 Chlorochtane ND 2.0 Chlorochtane ND 3.0 2-Chlorotoluene ND 1.0 4-Chlorotoluene ND 1.0 4-Chlorotoluene ND 1.0 4-Chlorotoluene ND 1.0 cis-1,2-DicRecombane ND 1.0 cis-1,3-Dichloropropene ND 1.0 Dibromochtoromethane ND 1.0 Dibromochtoromethane ND 1.0 L2-Dichlorobenzene ND 1.0 L3-Dichlorobenzene ND 1.0 L3-Dichlorobenzene ND 1.0 L3-Dichlorobenzene ND 1.0 L3-Dichlorobenzene ND 1.0 L4-Dichlorobenzene ND 1.0 L1-Dichlorobenzene ND 1.0	Bromoform	ND	1.0					
Carbon Tetrachloride         ND         1.0           Chlorobenzene         ND         1.0           Chlorobethane         ND         2.0           Chloroform         ND         1.0           Chloroform         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           6:5-1,2-DCE         ND         1.0           6:5-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           Dibromoethane         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-Dichlorobehane         ND         1.0           1,1-Dichlorobehane         ND         1.0           1,1-Dichloropropane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0	Bromomethane	ND	3.0					
Carbon Tetrachloride         ND         1,0           Chlorobenzene         ND         1,0           Chloroethane         ND         2,0           Chloroform         ND         1,0           Chlorodoluene         ND         3,0           2-Chlorodoluene         ND         1,0           4-Chlorotoluene         ND         1,0           6:s-1,2-DCE         ND         1,0           6:s-1,3-Dickloropropene         ND         1,0           1,2-Dibromo-3-chloropropane         ND         1,0           Dibromoethane         ND         1,0           1,2-Dicklorobenzene         ND         1,0           1,3-Dicklorobenzene         ND         1,0           1,4-Dicklorobenzene         ND         1,0           1,1-Dickloroethane         ND         1,0           1,1-Dickloroethane         ND         1,0           1,2-Dickloropropane         ND         1,0           1,2-Dickloropropane         ND         1,0           1,1-Dickloroethane         ND         1,0           1,2-Dickloropropane         ND         1,0           1,2-Dickloropropane         ND         1,0	2-Butanone	ND	10					
Chlorobenzene         ND         1.0           Chloroform         ND         1.0           Chloromethane         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           Dibromomethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichlorobenzene         ND         1.0           1,2-Dichloroprop	Carbon disulfide	ND	10					
Chloroethane         ND         2.0           Chloroform         ND         1.0           Chloromethane         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dirbromo-3-chloropropane         ND         1.0           Dibromomethane         ND         1.0           Dibromomethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichloroethane         ND         1.0           1,1-Dichloroethane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0	Carbon Tetrachloride	ND	1,0					
Chloroform         ND         1.0           Chloromethane         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           Dibromoethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichloroethane         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           1,3-Dichloropropane         ND         1.0	Chlorobenzene	ND	1.0					
Chloromethane         ND         3.0           2-Chlorotoluene         ND         1.0           4-Chlorotoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         1.0           Dibromomethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorobenzene         ND         1.0           1,1-Dichloroethane         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           1,3-Dichloropropane         ND         1.0	Chloroethane	ND	2.0					
2-Chlorotoluene       ND       1.0         4-Chlorotoluene       ND       1.0         cis-1,2-DCE       ND       1.0         cis-1,3-Dichloropropene       ND       1.0         1,2-Dibromo-3-chloropropane       ND       1.0         Dibromomethane       ND       1.0         Dibromomethane       ND       1.0         1,2-Dichlorobenzene       ND       1.0         1,3-Dichlorobenzene       ND       1.0         1,4-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         1,3-Dichloropropane       ND       1.0	Chloroform	ND	1.0					
4-Chlorotoluene         ND         1.0           cis-1,2-DCE         ND         1.0           cis-1,3-Dichloropropene         ND         1.0           1,2-Dibromo-3-chloropropane         ND         2.0           Dibromoethane         ND         1.0           Dibromomethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorodifluoromethane         ND         1.0           1,1-Dichloroethane         ND         1.0           1,1-Dichloroethene         ND         1.0           1,2-Dichloropropane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0	Chloromethane	ND	3.0					
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-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         1,3-Dichloropropane       ND       1.0	2-Chlorotoluene	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-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	4-Chlorotoluene	ND						
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-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		ND						
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         1,2-Dichloropropane       ND       1.0         1,3-Dichloropropane       ND       1.0								
Dibromochtoromethane         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           1,2-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0								
Dibromomethane         ND         1.0           1,2-Dichlorobenzene         ND         1.0           1,3-Dichlorobenzene         ND         1.0           1,4-Dichlorodifluoromethane         ND         1.0           1,1-Dichloroethane         ND         1.0           1,1-Dichloroethane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,2-Dichloropropane         ND         1.0           1,3-Dichloropropane         ND         1.0	190							
1,2-Dichlorobenzene       ND       1.0         1,3-Dichlorobenzene       ND       1.0         1,4-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         1,3-Dichloropropane       ND       1.0		ND						
1,3-Dichlorobenzene       ND       1,0         1,4-Dichlorodenzene       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								
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								
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	1,4-Dichlorobenzene							
1,1-Dichloroethane       ND       1.0         1,1-Dichloroethene       ND       1.0         1,2-Dichloropropane       ND       1.0         1,3-Dichloropropane       ND       1.0	State of the state							
1,1-Dichloroethene       ND       1.0         1,2-Dichloropropane       ND       1.0         1,3-Dichloropropane       ND       1.0								
1,2-Dichloropropane ND 1.0 1,3-Dichloropropane ND 1.0								
1,3-Dichloropropane ND 1,0								
	min minimin alambania							

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- I Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR Quarterly Sampling** 

Sample ID 5mL rb	SampT	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		N-11
Client ID: PBW	Batcl	h ID: R1	3891	F	RunNo: 1	3891				
Prep Date:	Analysis D	Date: 10	0/7/2013		SeqNo: 3	96844	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachioroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID 100ng Ics	SampT	ype: LC	s	Tes	Code: El	PA Method	8260B: VOL	ATILES			
Client ID: LCSW	Batch	ı ID: R1	3891	F	lunNo: 1	3891					
Prep Date:	Analysis D	ate: 10	0/7/2013	8	eqNo: 3	96846	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	82.2	124				
Chlorobenzene	19	1.0	20.00	0	94.7	70	130				

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID 100ng Ics	SampT	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID: LCSW	Batch	ı ID: R1	3891	F	RunNo: 1	3891				
Prep Date:	Analysis C	)ate: 10	)/7/2 <mark>01</mark> 3	5	SeqNo: 3	96846	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	119	83.5	155			
Trichloroethene (TCE)	19	1.0	20.00	0	96.3	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr; 4-Bromofluorobenzene	10		10.00		99.5	70	130			
Surr; Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID 1310301-001a ms	SampT	ype: MS	3	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: Influent	Batch	ID: R1	3891	F	RunNo: 1	3891				
Prep Date:	Analysis D	ate: 10	/7/2013	8	SeqNo: 3	96865	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20,00	0	103	67.9	137			
Toluene	21	1.0	20.00	0	107	77	127			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	114	66.5	131			
Trichloroethene (TCE)	19	1.0	20.00	0	94,4	66.3	134			
Surr: 1,2-Dichloroethane-d4	9,8		10.00		98.4	70	130			
Surr: 4-Bromofluorobenzene	10		10,00		104	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.9	70	130			
Sun: Toluene-d8	10		10.00		103	70	130			

Sample ID 1310301-001a m	sd SampT	ype: MS	SD	Tes	Code: El	PA Method	8260B: VOL	ATILES		
Client ID: Influent	Batch	h ID: R1	3891	F	RunNo: 1	3891				
Prep Date:	Analysis D	Date: 10	)/8/2013	8	SeqNo: 3	96866	Units: µg/L			
Analyle	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	67.9	137	0.381	20	_
Toluene	20	1.0	20.00	0	101	77	127	5.79	20	
Chlorobenzene	18	1.0	20.00	0	92.4	70	130	8,35	20	
1,1-Dichloroethene	23	1.0	20.00	0	114	66.5	131	0.245	20	
Trichloroethene (TCE)	19	1.0	20.00	0	94.1	66.3	134	0.317	20	
Sur: 1,2-Dichloroethane-d4	10		10.00		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	9.9		10.00		99.4	70	130	0	0	
Surr: Toluene-d8	9.7		10.00		97.1	70	130	0	0	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

**GBR** Quarterly Sampling

Sample ID mb-1

SampType: mblk

TestCode: SM2320B: Alkalinity

Client ID: PBW

Batch ID: R13890

RunNo: 13890

Prep Date:

Analysis Date: 10/7/2013

Units: mg/L CaCO3

Analyte

SeqNo: 396772

HighLimit

Qual

Total Alkalinity (as CaCO3)

**PQL** 20

Sample ID Ics-1

SampType: Ics

Result

ND

TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R13890

RunNo: 13890

Prep Date:

SeqNo: 396773

Units: mg/L CaCO3

Analysis Date: 10/7/2013

SPK Ref Val %REC

Analyte

HighLimit

**RPDLimit** 

**RPDLimit** 

Qual

80.00

90

LowLimit

%RPD

Total Alkalinity (as CaCO3)

81

SPK value

110

20

SPK value SPK Ref Val %REC LowLimit

101

%RPD

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. E Value above quantitation range
- J Analyte detected below quantitation limits 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

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## Hall Environmental Analysis Laboratory, Inc.

WO#:

1310301

25-Oct-13

Client:

Western Refining Southwest, Inc.

Project:

GBR Quarterly Sampling

Sample ID MB-9728	SampT	ype: ME	BLK	Tes	TestCode: SM2540C MOD: Total Dissolved Solids							
Client ID: PBW	Batch	ID: 97	28	R	RunNo:	13982						
Prep Date: 10/9/2013	Analysis Date: 10/10/2013			S	SeqNo:	399517	Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	C LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Total Dissolved Solids	ND	20.0										

Sample ID LCS-9728	SampT	ype: LC	S	Tes	tCode: SI	M2540C MC	DD: Total Dis	solved So							
Client ID: LCSW	Batch	ID: 97	28	F	RunNo: 1	3982									
Prep Date: 10/9/2013	Analysis D	ate: 10	/10/2013	\$	SeqNo: 3	99518	Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Total Dissolved Solids	1050	20.0	1000	0	105	80	120	•	•						

Sample ID	1310301-002BMS	SampT	ype: MS	<b>3</b>	Tes								
Client ID:	Effluent	Batch	ID: 97	28	F	RunNo: 13982							
Prep Date:	10/9/2013	Analysis D	ate: 10	/10/2013	8	SeqNo: 3	99525	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Total Dissolved	Solids	3790	20,0	1000	2731	105	80	120					

Sample ID 1310301-002BM	SD SampT	/pe: MS	SD .	Tes	tCode; S	M2540C MC	DD: Total Dis	solved So	lids			
Client ID: Effluent	Batch	ID: 97	28	F	RunNo: 1	3982						
Prep Date: 10/9/2013	Analysis D	ate: 10	)/10/2013	9	SeqNo: 3	99526	Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit _	Qual		
Total Dissolved Solids	3780	20.0	1000	2731	105	80	120	0.185	5			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level;
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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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

# Sample Log-In Check List

Client Name: Western Refining Southw	Work Order Number:	1310	301			RcptNo	1
Received by/date: 4F	10/05/13						
Logged By: Michelle Garcia	10/5/2013 10:00:00 AM			mile	u Go	ruis	
Completed By: Michelle Garcia	10/7/2013 9:05:46 AM			Mich	u Co		
Reviewed By:	1907/13			·	'		
Chain of Custody	19091						
1. Custody seals intact on sample bottles?		Yes		No		Not Present ✓	
2. Is Chain of Custody complete?		Yes	<b>y</b> .	No		Not Present	
3. How was the sample delivered?							
<u>Log In</u>							
4. Was an attempt made to cool the sample	s?	Yes	•	No		NA	
5. Were all samples received at a temperatu	ure of >0° C to 6.0°C	Yes	<b>✓</b>	No		NA	
6. Sample(s) in proper container(s)?		Yes	· !	No			
7. Sufficient sample volume for indicated tes	it(s)?	Yes	~	No			
8. Are samples (except VOA and ONG) prop	perly preserved?	Yes	•	No			
9. Was preservative added to bottles?		Yes		No	•	<b>N</b> A	
10.VOA vials have zero headspace?		Yes	<b>~</b>	No		No VOA Vials	
11. Were any sample containers received bro	oken?	Yes	• ;	No	~		
						# of preserved bottles checked	\
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes	✓:	No		for pH:	or >12 unless noted)
13. Are matrices correctly identified on Chain	of Custody?	Yes	~	No		Adjusted	NO Comess noted)
14. Is it clear what analyses were requested?	a. Cabiboy.	Yes	·	No			
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes	<b>~</b>	No		Checked by:	d/
Special Handling (if applicable)							
16. Was client notified of all discrepancies with	h this order?	Yes		No		NA 🗸	
Person Notified:	Date:	MINISTER SERVICE	A4111111111111111111111111111111111111		-		
By Whom:	Via:	eMa	ail	Phone	Fax	In Person	
Regarding:	THE RESERVE OF THE PARTY OF THE	WI-WALVANIA A	//- WANTED	***************************************	*********		
Client Instructions:	STOCKET TO STATE OF THE STATE O						
17. Additional remarks:							
18. Cooler Information							
Cooler No Temp °C Condition	Seal Intact   Seal No   S	Seal D	ate	Signed I	Ву		

HALL ENVIRONMENTAL	ANALYSIS LABORATORY		6					(N 10	(X)	Air Bubbles												aager@ltenv.com
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Turn-Around Time:	X Standard	1 26	GBRO	Project #:		Project Manager:	Ashley Ager	Sampler:	T C	ner nd #	٠,	9	ANN/C							Received by:		
Chain-of-Custody Record	Western Pofining	Ohingon G	Mailing Address:	SIPTS MIN, bl.	505-632-4120	email or Fax#: Kelly, robinson@wnr. com	J □ Level 4 (Full Validation)	□ Other		Matrix Sample Request ID	As Influent										Morgay Whomas	Amothe h Jaten
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_	Client:	<del></del>	Mailing	Bi	Phone #:	email	QA/QC Package:	Accreditation DELAP	□ EDD (Type)	Date	10-4-13	54.45	15-H-13							Date:	را الم الم	104 103

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VOCs 8260
General Chemistry:
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pH BC

TDS

alkalinity

hardness

anions

bromide

chloride

sulfate

fluoride

nitrate/nitrite phosponus

cations

calcium

iron

magnesium

manganese

.1,

potassium

sodium